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ORIGINAL ARTICLES.

PRACTICAL DATA ON EUROPEAN HEALTH RESORTS AND SANITARIA.[1]

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THE execution of a long-cherished plan to examine the practical workings of health resorts and sanitaria with which American physicians are more or less theoretically familiar, has enabled the writer to add to his knowledge on the subject much that is useful, and to remove much from his conception that is false and misleading. To transmit to his colleagues as briefly as possible the result of his investigations is the object of this communication, which will refer to representative resorts for the respective class of maladies in which they are prescribed.

THROAT AND LUNG AFFECTIONS.

Salzbrun.—Salzbrun is a town of about 3500 inhabitants, situated in Silesia about 1350 feet above the sea level. Being out of the usual line of travel pursued by Americans and Englishmen, it is not so well known as Ems and other resorts of like therapeutic qualities. The Kurhaus and its adjacent villas, hotels, and boarding-houses are situated in a sheltered valley of a branch of the Giant Mountains, embowered amid pine-covered hills which protect it against strong winds and lend to the air that balmy softness which allures sufferers from throat and pulmonary troubles. The soil is sandy, with a substratum of clay and rock, affording excellent drainage. In bright, sunny weather it is a cheery nook, but in rainy weather is somewhat dreary, owing to the somber hue of the green-clad hills and the exclusion of sunlight by the too assiduous cultivation of shade trees. The latter are indeed the glory of the place. The promenade of stately trees is occupied by a motley crew which, armed with cups, traverses it going to or returning from the spring. The terraced hills adjoining the Kurhaus are covered by a dense thicket of small firs, the aroma of which has long been famed for its soothing effect upon the throat, and adds immensely to the "suggestive element" of therapeutics, the influence of which is potent for good in most of these resorts.

[1] Read at a meeting of the Northwestern Medical and Surgical Society of New York, May 19th, 1897.

The *real* advantages of Salzbrun are derived from its somewhat equable thermometric and barometic conditions. (Average temperature, 58.1° F.; barometer, 750 mm.) There is an average of about one rainy day out of every four, hence freedom from irritating dust is almost assured, an element which cannot be overestimated in the management of diseases of the respiratory organs. To this remarkable circumstance the chief advantage of Salzbrun over many other resorts for similar maladies may be attributed. The construction of promenades and walks affords evidence of skilful adaptation of the natural undulations and other scenic conditions to the use of invalids whose capacity for exercise is limited. Terraces are well graded and arranged in such manner that a large number of promenaders may utilize them without crowding. This is readily accomplished by reason of the thick forest of small pines which have been artificially cultivated wherever Nature proved deficient, thus screening each terrace from others quite adjacent. The ease with which feeble patients ascend these emerald-wooded hills strikes the observer on every side. Herein lies another advantage of Salzbrun. As a resort, the entire invalid population may and does live in the open air during the greater part of each day. When the Kapelle plays the morning choral at 6 A. M., the crowd begins its wanderings to the spring, moving gently along the promenade, engaged in conversation or observing the crowds. With the exception of meal times, which are frequent but brief interruptions, walking or sitting in the open air continues until 9 or 10 P. M. Milk and whey are used freely by the patients, always, however, in obedience to the physician's directions. The preparation and disposition of milk is an important industry here. The milk is obtained from cows, goats, asses, and sheep. Kefir, whey, plain or combined with iron, are furnished at the larger springs from clean cans, cold or warm, being dispensed by prettily attired dairy maids, who present a strong contrast to the male dispensers standing at the wells furnishing the mineral water.

It is worthy of mention that the entire dairy department, supplied with a centrifuge and sterilizers, is under the supervision of a chemist who applies all modern methods to its purification, while the health of the animals furnishing the milk is carefully guarded by a veterinary surgeon. About 30,000

liters of cow's milk are consumed in a season; this does not include asses' milk (for which a similarity to human milk is still claimed here), or sheep's milk, which is said to be exceedingly rich in cream. The mixture of whey with the warm water of the Obersalzbrunnen is recommended by physicians here as an "expectorant" and laxative. Many patients may be seen sipping this combination at the spring. The hydrotherapeutic appliances of this kuront are primitive; a modern apparatus is promised by the management.

A novel department may be found on the hillside near the promenade. It is the "Gurgel pavilion," or gargling hall. This is built over the "Mühlbrunnen," which has the reputation for great efficacy as a local application in affections of the nose, throat, and larynx. There are separate halls for males and females, each being divided into compartments. The latter are about eight by four feet and contain a small gutter, above which is fastened a bar which is grasped by the patient's left hand, while the right holds the cup which supplies the mouth with the gargle. The head is thrown back, as usual in these guttural gymnastics, and each patient laves his throat to his heart's content, expelling the fluid into the gutter, which is kept cleansed by a flowing stream of water containing some disinfectant or steam. The gurgling chorus which reaches the ear as one approaches this pavilion is unique. That the patients derive any real benefit, besides the cleansing effect from these applications, seems doubtful at least. It certainly amuses them and serves to while away the tedium of an invalid existence; it is done with punctual regularity before breakfast precisely as prescribed by the physician, therefore must contribute a strong mental element to the "cure."

The chief disadvantage of Salzbrun lies in its popularity (in 1895 the number of patients aggregated 4300). Last summer it was so large that people were uncomfortably jostled during the morning hours when the spring is most frequented. It would be wise to limit the number of patients, for many will be driven away by the discomfort of too close contact with similar sufferers.

The writer's experience with the food and service in the dining-room of the Kurhaus does not warrant him in commending it; but the lodging is most comfortable. Upon the whole Salzbrun may be safely prescribed as a useful resort for the milder forms of affections of the upper respiratory tract and in some cases of chronic or subacute catarrhal disturbances of the bronchiæ. In regard to the water, it is claimed that its large proportion of the bicarbonate of soda combined with an appreciable percentage of bicarbonate of lithia, and a considerable quantity of free carbonic acid enhances tissue change by increasing oxidation; that it dissolves mucus and diminishes its formation. Empirically, the Obersalzbrunnen has demonstrated its value not alone in the catarrhal affections referred to, but also in gout, lithiasis, diabetes, and other affections connected with defective or abnormal oxidation processes. It is palatable and does not deteriorate when kept in well-stoppered receptacles. Hence, it is shipped in large quantities (one million bottles in 1895). Conversation with the patients, one of whom was a case of aborted phthisis, diagnosticated and sent to Salzbrun fifteen years ago, satisfied the writer of the clinical value of the climate and water of Salzbrun in catarrhal affections of the respiratory tracts, and in cases of emphysema, when not too far advanced.

The congregation of cases of laryngeal phthisis in so small a resort renders it unfit for the treatment of diseases of the stomach and others referred to, because most of the latter being disposed to be hypochondriacal would surely be greatly depressed by the presence of the sad, pallid, and haggard specimens of coughing humanity seen here.

It may be mentioned that the cost of living is very reasonable in Silesia, the people are kind-hearted, the hotel proprietors being the very essence of urbanity, looking personally after the comfort of their guests. In the smaller hotels it seems to be the custom for the host to bid each and every guest at his table "Mahlzeit," which comprises all that may be required for the enjoyment of the meal.

In order to acquaint himself personally with a more noted resort the writer visited *Ems*. Unlike Salzbrun, Ems is somewhat contracted, lying in a narrow valley between spurs of the Rheingebirge, and being divided into two unequal parts by the river Lahn, which is bridged at two points. These hills rise to a height of from 500 to 1000 feet almost precipitously, presenting in some parts jutting rocks which seem to overhang the dwellings, but at most points these are covered with abundant foliage, varied by well-tilled fields and vineyards. Consequently there is no room for expansion in the direction of the hill sides, and patients are compelled to climb somewhat precipitous elevations in order to reach points outside of the village. Much has been done to overcome this difficulty, walks having been graded, and a cog railway having been constructed on the Mahlberg, upon whose summit pleasant well-shaded walks are abundant, affording the invalid the most enchanting views of the Rhine hills. Excursions up and down the Rhine, which is only twenty minutes distant, concerts, and the usual diversions of fashionable watering-places offer amusement and entertainment in a form which does not interfere

with the exacting demands of the "cure." Early hours for retiring being insisted upon by the physicians the concerts cease at 10 P. M., and begin at 7 A. M. The morning choral finds a motley assemblage, consisting of many nationalities, upon the stone pavements which separate the Kurgarten from the buildings containing the springs. This space is about the size of a small New York square, and is therefore very much overcrowded during the drinking hours. The springs are situated in a row of buildings which contain the shops usually found in these health resorts.

There are nine hot saline akalin springs, varying in temperature from 88° to 120° F., three of which are used for purposes of inhalation and six for drinking. The mineral constituents are feeble, the chief being 1 per 1000 of chlorid of sodium and 2 per 1000 of bicarbonate of soda, some containing as high as 500 volumes per 1000. The springs mostly patronized are the Kesselbrunnen and Kraehuchen, the former for inhalation and the latter for internal use. The Kaiserquelle appears to be the least used, judging from the number visiting it in the mornings when I observed them.

The most ingenious methods for inhalation have been devised and are in active operation here. The Schnitler apparatus delivers the Kesselbrunnen water into the patient's throat under pressure of half an atmosphere, the inhaling fluid consisting of some mild antiseptic balsamic agent, which is poured into the bottles. The Levin apparatus drives the inhaling fluid under a pressure of four atmospheres into the inhaling apparatuses; the latter are placed in rows upon a table, the patient sitting quietly in front of them inhaling. Other apparatuses for inhaling came under my notice in the splendidly arranged Quaehl Inhalatorium, which contains sixteen Jahr's apparatuses for inhalation of fluid medicines and saline or acid solutions, which are atomized into the finest spray; ten Dupont-Matthew machines for the inhalation of compressed air and expiration into rarefied air, with or without medicinal agents, all being prescribed by the medical attendant; two machines for inhaling oxygen, pure or mixed, according to prescription; three Waldenburg's apparatuses, and one Rossbach-Zobeibier respiration chair for lung gymnastics.

The most remarkable inhaling apparatus I observed is the Wassmuth inhalation, which offers facilities for inhalation of finely atomized fluids, chiefly Ems waters and balsams, to eighty persons, who may move around or sit down quietly and occupy themselves in a well-ventilated room.

A solution of chloro-borate of soda, devised by Professor Fresenius, is the favorite inhaling fluid. I found it agreeable, and, contrary to my preconceived notions, distinctly felt the effect upon my bronchial tubes in promoting expectoration.

The Quaehl Inhalatorium is capable of affording 110 patients facilities for inhalation. The therapeutic indications are as follows:

1. Oxygen inhalations are used in dyspneic conditions and in catarrh, emphysema, and asthma; also, in chlorosis, leukemia, and gout.

2. Inhalations of compressed air are applied in bronchitis, asthma, pleuritic exudates, and in phthisis. Exhalation into rarified air is applied in bronchitis, emphysema, and asthma. In most of these diseases a combined method is applied.

Another large institution is Goebel's Pneumatic Inhalatorium, in which hydraulic pressure is utilized and the air inhaled is not only warmed but cleansed by passing through a Wolff flask. The apparatus is automatic, and serves twenty-one persons; the water for inhalation is constantly renewed; the inspired air is not drawn from the room, but from the external air.

That there is a positive effect upon the air passages produced by these inhalations I am fully convinced by personal trial, but my observations upon their therapeutic effects are not sufficient to warrant any reliable deductions.

No treatment is administered in these principal inhalatoria without a physician's prescription. Dr. Geisse and his son, who are English physicians of long residence at Ems, offered me every facility by personal guidance to examine these institutions.

Ems is very hot in midsummer, but the air is pure and the nights are usually cool. There are many beautiful excursions, since it lies only half an hour's ride from the Rhine.

PHTHISIS.

Germany is the birthplace of the systematic treatment of phthisis by the hygienic, dietetic, and climatic method. Perhaps the most gratifying results observed in the treatment of chronic diseases are obtained in the famous institutions at Goerbersdorf, Falkenstein, Rupertshain, Rheiboldgrun, and others. A brief outline of these may interest you.

In Goerbersdorf, a small village lying in the mountains of Silesia, are situated the largest sanitaria for phthisis. Among these is the great institution built by Herrmann Brehmer. The enormous building is constructed of brick, and almost its entire façade is covered with glass-enclosed verandas. The grounds occupy 600 acres, and cost several million marks. Here the indefatigable pioneer of modern phthisis-therapy spent his whole life, and obtained the most favorable results. Unfortunately his heirs are unable or unwilling to leave the management of the institution in the hands of its capable medical director. I

was unable to obtain more than a very superficial idea of the institution. It contains facilities for treating every stage of phthisis, including a very crude apparatus for hydrotherapy, consisting of a shower-bath similar to that I saw later at Falkenstein. The physician stands in an adjoining room which is connected by a speaking tube, and directs the duration of the shower. But there is no thermometer to indicate the temperature of the water. Still they claim good results from hydrotherapy, and regard it as a powerful auxiliary. The method pursued here is somewhat indicated by an inscription upon one of the walls which reads, translated, "Patients do not come here to be amused, but to be cured." Brehmer always discouraged the association of phthisical people with the well, because the latter offer temptations to the former, which lead to transgression of his rules. Patients are encouraged to amuse themselves with innocent games, singing, dancing, etc., provided the physician's consent has been obtained.

Time will not permit a more extended description of this pioneer-institution for phthisis-therapy. The author of the method, Herrmann Brehmer, has passed to the great majority, but his teachings live and have most able exponents in Dettweiler, Roempler, and others.

The most modern sanitarium for phthisis, which I have visited, is also situated in Goerbersdorf. During the past twenty years it has been conducted by Dr. Theodor Roempler, a man of high attainments and the very essence of kindly courtesy. The institution being a model one is worthy of some descriptive details. It lies in a beautiful valley, embowered amid pine-covered mountain peaks. The grounds consist of 368 acres of land and 115 acres of forest. The former is tastefully laid out in walks and gardens, which may by an ingenious arrangement be sprinkled in a short time and thus become freed from dust. There are covered colonnades and a Wandelbahn for walking in inclement weather. The Liegehalle, a rest hall, being in a protected part of the building may be used in all kinds of weather for the air cure. The buildings are chiefly frame and contain 100 dwelling-rooms, which are heated by water, as is also the large winter or palm garden. The dining-room seats 200 persons and is attractive in all its appointments. Water is obtained from a stream issuing from the mountain peaks 300 feet above the valley. Laboratories for bacteriological work, a steam disinfecting apparatus, good diet, ventilation, and all the most approved methods combine to render this a perfect modern sanitarium for phthisis, which is capable of treating patients at all seasons. Roempler claims with justice as the result of his observations that the earliest possible removal of the consumptive from his unfavorable environment to the pure mountain air will most surely conduce to his recovery in a few weeks, while later action would defer it in proportion to the delay. Everything in the institution is under Dr. Roempler's control, he being the sole proprietor. He claims that tuberculosis depends not so much upon infection as upon the condition of the soil upon which it is implanted. He agrees with Hueppe that the cause of infectious diseases is always internal, as in the condition of the cells and tissues which the older writers called predisposition. He does not compare the Koch bacilli, as does Cornet, to bullets which may strike down any one, and from which many may and do escape, but rather to a spark whose devastation depends upon the quality of the material upon which it falls. If the seventh part of the human race dies of phthisis, and every fourth individual of tuberculosis, how difficult it must be for the other portion to escape, if it were not for the need of a good soil upon which infection may produce its sad fruit. These are trite observations now, but Roempler battled for them many years ago. He does not claim any special advantage for high altitude as do many others, but attributes success, as does his preceptor Brehmer, chiefly to proper hygienic, dietetic, and methodical treatment. That the latter not only cures but prevents phthisis Roempler has shown by the municipal statistics of Goerbersdorf.

During the century ending in 1889, seventy-two persons died of phthisis in Goerbersdorf; during ten years of the period fourteen persons died of the disease, while during the last ten years, despite a doubling of the population, the number of deaths was only five since 1875. Roempler, who knew and saw every consumptive among the inhabitants of the village since that year, states that of 207 deaths only 11 died from phthisis. During the same period 19 persons died of old age, *i.e.*, between the ages of 70 and 91. During that same period 933 patients died of phthisis in the Goerbersdorf institution. This demonstrates the fact that the inhabitants, though often in contact with phthisical patients, possess an immunity which, in his opinion, is due to their outdoor life, berry picking being a favorite occupation. Roempler insists that the fear of contagion is overdrawn, and that the intelligent public *would derive more benefit from instruction in a proper mode of life, proper respiration, nutrition, and care of the skin than from the latest discoveries in bacteriology.* My brief interview with this interesting gentleman brought many things to my practical appreciation which had hitherto been overlooked.

The chief aims of treatment are rest and exercise,

diet, open-air life and hydrotherapy. No patient having a temperature above 99.5° F. is allowed to exercise. Those who are permitted to leave the institution receive instruction to walk upon the carefully constructed roads which contain landmarks and sheltered seats, and which in winter are swept clear of snow. They are cautioned not to fatigue themselves. Rest in the open air appears to be the chief therapeutic agent. Lounging chairs are comfortably placed under the balconies, which have a southern exposure, and a portion of which is inclosed in glass for the worst cases. There is also a dressing-room adjoining the balconies, in which patients are enjoined to change their clothing when perspiring too freely after their walks before they occupy seats on lounges. Well protected by clothing and furs in winter, and appropriately clad in summer, the patients having temperature elevation recline upon lounging-chairs from the time they leave the breakfast table until the dinner hour, and again in the afternoon until supper. Patients presenting temperatures above 100° F. have their meals served while in the chairs. Nurses are in constant attendance. At stated intervals patients are made to rise and pass through a system of lung gymnastics, which is mild yet effective. After supper the patients rest awhile, and then retire to their chambers. The latter, being amply provided with windows, are ventilated during the entire day. An hour before the patients enter their rooms the latter are heated, the windows having been closed. The patients having temperature above 100° F. are now carefully undressed by the attendants, others undressing themselves. After being well tucked in, the windows are opened and are kept open during all seasons. Attendants watch the patients during the night and see that they are properly covered and that the face alone is exposed to the cold air. Before the patients rise the windows are again closed; the rooms are so heated (in winter) that there is no uncomfortable exposure. After the rooms are vacated, the windows are again opened and remain open all day. Bed clothing is aired and the rooms are carefully swept. Everything is scrupulously clean and sterilized. The beds, pillows and mattresses are often subjected to superheated steam, also the clothing of all patients leaving the institution.

Falkenstein is a small village lying about two hours by rail and wagon-road from Frankfort-on-the-Main. Its being the residence of the widowed Empress of Germany and of Baroness Rothschild would indicate that Nature has been lavish in her gifts to this mountain region. Dr. Dettweiler, who with Brehmer is a pioneer of dietetic and hygienic phthisis-therapy, has built here a private sanitarium, capable of containing fifty patients which is resorted to by phthisical patients from all parts of the world.

Dettweiler does not favor large institutions, 100 patients is the largest number he would sanction. In this respect Schroetter of Vienna differs from him, being engaged in the construction of an institution for 300 patients, which is to be so arranged and governed that each patient shall have individual care. The principle of rest for cases having temperature elevation is rigidly enforced. The rules of conduct and treatment described as existing in Dr. Roempler's sanitarium are in force here. Dettweiler and Brehmer having been the original exponents of the rest treatment, the former carries the principle of rest to the utmost extreme. Whether the patients are stretched upon their lounging-chairs or at meals absolute silence is insisted upon. Even coughing is forbidden. When I remonstrated with Dr. Dettweiler against this seeming cruelty, he asked me if I would scratch my head in a room-full of people every time it itched. He teaches the patients to resist the desire to cough to the utmost. An embellished tablet hanging on the upper wall of the Liegehalle contains the following verse composed by a cured patient:

"In dem Tempel der Bacille
Herrsche musterlose Stille,
Walte Lust und Heiterkeit,
Dann ist die Heilung nicht mehr weit."

Each patient has a bottle for expectorations. The house is scrupulously neat and clean. Everything is sterilized. All the table utensils are carefully subjected to prolonged boiling (before each meal). The smallest details of the patient's life are controlled by the supervising physician, and nothing of any importance is left to his or her judgment. The daily exercise in the open air, the use of lung gymnastics, the administration of stimulants, even the changing of garments are all under the direction of the attending physician. Dettweiler says the physician who wants to manage successfully such an institution must himself be a good man, the possessor of a big heart and much patience, and he must be supplied with all the instincts of a "shepherd's dog." The relation of teacher and pupil, in the fullest and best sense of the word, must exist between the physician and his patients, and, without entering into the field of popular medical lectures, the patients should be taught to understand the physiologic and hygienic laws which it is so essential for them to follow if they desire to come out victorious in the battle with the bacillus of tuberculosis. The physician's office should be the patient's confessional chamber, and every possible effort should be made among the patients to foster implicit confidence in and strict obedience to the physician.

A few patients who can afford such a luxury live in neatly constructed huts, which revolve and thus easily remove the open portion from the wind or driving rain. A New York patient who occupied one of these huts informed me that he was improving in this cold climate, after being injured by the climate of Nice. Hydrotherapy is practised very crudely. A small room, with a cement floor shaped into a basin, receives the nude patient, who stands under a shower eighteen inches in diameter. The attendant draws the cord and the patient receives a fierce cold shower. This is repeated daily. The courteous attendant in reply to my anxious inquiry regarding the temperature and duration, replied that "the water is just as it comes from the mountain, and the time is left to the judgment of the physician." My inquiry regarding the exact temperature of this water was satisfied by a bath thermometer being brought from an adjoining room and placed under the flowing water. It registered 58° F., and this in midsummer. In winter it registers about 45° F. Dr. Blumenfeld, the courteous first-assistant of Dr. Dettweiler, assured me that patients bear the shower very well, after being somewhat improved by the hygienic and dietetic treatment pursued for a few weeks. I regretted to discover this crude hydrotherapy, because a most valuable element of treatment is lost to feeble patients and applied very late in those who may bear it better. The method I have introduced in the Montefiore Home, in this city, where it is practised with much success, is far more rational. Here every patient is at once subjected to mild ablutions or rain baths, after carefully widening the cutaneous vessels by hot-air baths short of perspiration. Day by day the reactive capacity is enhanced, the heart invigorated, the respiration deepened, and the nutrition improved. Gain of weight and the patient's appearance testify clearly to these results. Some patients refuse to take these baths unless they are allowed to receive low temperatures. Sixty-five degrees F. is the lowest I prescribe, but some of the Montefiore patients have become so inured to them that they bear 45° F. with impunity, as I am informed by Dr. Fraenkel, and have observed myself in one case. This adaptation of temperature to the varying conditions of the patient and the gradual accustoming of patients to the shock and reaction, which I regard as imperative whenever the agent is applied, would seem more rational in phthisis than the application of a fixed and very low temperature which must exclude many otherwise favorable cases from the treatment.

An excellent luncheon at Dettweiler's sanitarium convinced me that the cuisine and attendance are unexcelled. Dr. Blumenfeld stated that the tone of the institution is one of hopefulness and good cheer. Good food, pure air and water, and ventilation of bed-rooms combine to produce the excellent results obtained.

Institutions for the Middle Classes.—While investigating the subject of phthisotherapy my attention was drawn to the great movement for Volkheilstätte or people's sanitaria, now in full operation in Germany. With a view to observe their workings, I visited two of these institutions.

Ruppertshain.—This is a small institution established under Dettweiler's auspices for the purpose of affording working people the means of obtaining the same treatment which at the Falkenstein Sanitarium can be obtained only by well-to-do people. The cost at Falkenstein ranges from $3. to $5. per *per diem*, while at Ruppertshain the expense ranges from 62 cents to $1.50 per day, which is not sufficient to pay expenses. This noble institution, which is still in its infancy, being prepared for only sixty patients, and harboring at the time of my visit only thirty patients, received its chief impetus from the bacteriophobia of a rich but generous woman. Dr. Hirsch, a philanthropic physician of Frankfort, had founded a small sanitarium with twenty beds at Falkenstein. This was bought for $15,000 by the Frankfort Association for Convalescents. It was situated opposite the villa of the Baroness Rothschild, who, fearing the near proximity of an army of bacilli, offered $50,000 for the property, razed it to the ground, and disinfected the latter. Upon this capital the association was formed which now controls this beneficent institution, its members being chiefly among the best citizens of Frankfort and the neighboring towns. The Empress Frederick and the Baroness Rothschild are active contributing members who often visit the institution. (The latter established a separate kitchen in which the Jewish dietary and cooking laws could be strictly observed for the benefit of any Jewish patients desiring it.) Patients are sent by mutual benefit societies in Frankfort, Hesse, and other cities, which pay for each member. They are usually taken on eight-days' trial to ascertain the fitness of the case, which also is certified to by the previous medical attenddant.

Dr. Nahin, a former assistant of Dettweiler, being medical director, all the regulations of the Falkenstein Institution are strictly followed, the discipline being more strict. The water treatment is rational here. Patients are first subjected to daily dry friction, then cool, wet friction, and douches follow after their reactive capacity is established.

Many such institutions, called Volksheilstätte, have been established in Germany by sick insurance

companies. I was informed that Koch was expected to assume charge of a large one at Hoechst in the Odenwald.

A similar institution is located in Goerbersdorf, called "Krankenheim." This originated with and is in charge of Dr. H. Weicker, whom I had the pleasure of visiting. This is a modest institution; beginning with nine patients the number increased in 1896 to 185. One-half of the patients are sent by various sick benefit, and other associations, the other half are people of moderate means who defray their own expenses. The building was intended for a villa and is surrounded by fine old trees. Each room is occupied by two or three patients; the walls are painted in oil, and the rooms heated by porcelain stoves. The beds are of iron with wire mattresses. Woolen blankets used on the beds are enveloped by covers of washable material. Spittoons, in the shape of sand-glasses, are secured to the walls about the height of a man's chest. These are disinfected by lysol solution. Accidental expectorations on the floor are not allowed to be touched by the patients, who are enjoined to call an attendant with lysol solution. There are no spittoons in the bed-rooms, because patients were in the habit of indulging in shooting matches which soiled the floor. Cups, which must be held before the mouth, were therefore substituted. Each patient must clean his hands with a nailbrush before, and rinse his mouth with salt water before and after meals. In short, the strict discipline regarding the patient's conduct, his treatment, his occupation, diet, rising, and retiring, are given in writing. Separate groups elect their presiding officers, who are responsible for reports. Dr. Weicker endeavors to keep the patients busy all day with the "Kur," the principal part of which consists of lying in the open air. With regard to occupation Weicker gave me good reasons for differing from Wolff, and others, who favor some light work. How can tuberculous patients be expected to protect a crop against an approaching rain storm, for instance? At most he favors retaining some of the actually convalescent patients for farm labor in order to render their recovery more permanent than it would be if they returned to other unfavorable home environment. The hygienic education of the patient is made permanent; it not only furthers his restoration to health but maintains the latter, and converts him into a missionary of hygiene. The German legislature passed laws in 1889 for the furtherance of sick benefit and insurance companies, and for the authorization of the construction of sanitaria for consumptives. It has been demonstrated that among 1000 deaths at the ages from fifteen to sixty years, 322 are from consumption. If the ability to labor of each of these sick people could be increased three years, many millions would be saved, inasmuch as one-third of the entire population is involved.

In our own country similar conditions prevail, with the sad additional fact that mutual benefit societies are not so numerous as in older countries. No greater beneficence can be bestowed upon suffering humanity than the erection of sanitaria for phthisis by private and public aid to which people of moderate means could be sent in the *initial* stages of the disease.

The municipal authorities should erect a hospital for phthisical patients, in which all modern therapeutic methods may be utilized. To this all initial cases of phthisis reported to the Board of Health should be sent. This would *seem* a great hardship. But careful consideration would show that a focus of infection would then be removed from the "laboring-man's" home to which he may be returned in an improved condition, and imbued with the importance of observing strictly hygienic rules which would prevent the lighting up of any smouldering ember of his disease in himself or family. Tempting as is this subject time does not permit of my dilating upon it.

The late Dr. Paul Kretzschmaar of Brooklyn published an appeal for the construction of such sanitaria in 1888, which presents the subject in the clearest manner. The efforts of this enthusiastic philanthropist should be borne in mind whenever the subject of institutions for phthisis is discussed. They have indirectly borne some fruit in the building of the Seton Hospital, which was organized under the lamented West Roosevelt, and is now under the care of that able clinical teacher. Dr. Frank W. Jackson, chief of the Vanderbilt Clinic.

HEART DISEASES.

The treatment of cardiac diseases has found a large field at Nauheim, which I visited for the purpose of studying the carbonated saline baths utilized there.

Nauheim is a small town lying at the foot of the Taunus Mountain, and supplied by strong saline springs from which salt is made by evaporation. Having fine parks, excellent hotels, and good physicians, it is an ideal resort for cases requiring rest and treatment. The brothers Schott, following the initiative of Professor Beneke, discovered that many neurotics who used the baths improved not alone in their depreciated nerve-tone, but gained in cardiac vigor. By careful study the late Dr. Theodore Schott evolved a treatment of saline baths and Swedish (resisting) movements, the effects of which upon certain cardiac diseases are indisputable. Some of these baths are quite efficient in functional neurosis, and chronic rheumatism.

Briefly stated, the principal springs are the Karlsbrunnen for drinking, containing 16½ per cent. chlorid of sodium, 1 per 1000 of chlorid of calcium, and considerable free CO_2; and the Ludwigsbrunnen, which is a gaseous muriated water. The *sprudel* issues from the earth in a strong stream; it contains 2½ to 3 per cent. of chlorid of sodium, 2 to 3 per 1000 chlorid of calcium, and a considerable quantity of free CO_2, and its temperature ranges from 83° to 96° F. I visited the sprudel baths under the guidance of Dr. Goehler, the first assistant of Dr. Groedel. They are strong saline, effervescent, carbonated baths, which rush with great force into tubs sunk in the floor. These strong gaseous baths have the effect of greatly stimulating the cutaneous vessels, thus counteracting the chilling effect of low temperature. I saw a full bath of 82° F. borne for eight minutes with comfort, the patient emerging from it with a ruddy hue. The *rationale* of these baths has been somewhat obscurely stated by Schott to be a reflex stimulating influence upon the cardio-inhibitory or regulator nerves, improving the quality of the pulse.

Dr. Bezley Thorne and Sir William Broadbent claim that the favorable effect upon the heart and circulation is due to a dilation of the muscular arteries, and subsequently those of the skin by which the heart is relieved from backward pressure. But this would not increase the arterial tension, which is always observed. The experienced hydrotherapist finds a more simple explanation in the fact so often demonstrated that the first impression of cold upon the cutaneous vessels is their contraction. This increases arterial tension by driving the blood to the interior. But it is soon followed if not prolonged, or if neutralized by friction or other stimulus by a dilation which is not due to a paralysis of the vaso-constrictors, as in the case after warm baths, but to the stimulation of the vasodilators and consequent tonic dilation. Dr. Woods Hutchinson, Professor of Comparative Anatomy in University of Buffalo, has recently pointed out that it is probable that the cutaneous vessels possess inherent contractile power, which he denominates the skin heart. This is in accordance with my own clinical observations repeatedly presented before you and elsewhere. In my paper on "The Management of Pneumonia," read before you, I held that the result of local applications of cold to the skin in fever gives rise to an active dilation with maintenance of the tone of the vessels, an active hyperemia, by reason of which the blood is propelled more vigorously through them. The heart is thus relieved, I said on that occasion, not by a *vis a tergo*, as is the case after digitalis, but by a *vis a fronté* formed by broadening the blood stream in the cutaneous capillaries whose enhanced tonicity aids at the same time in propelling the blood onward; arterial tension is increased, as is evidenced by the better feeling of the radial arteries. This I regard as the *rationale* of the cold compress in pneumonia and of cold baths in infectious fevers, and is the *rationale* of the Nauheim saline baths. The effect is enhanced in the latter by its saline and gaseous constituents, which stimulate the vasodilators just as friction stimulates them in the Brand bath. This is the simple and, I believe, correct explanation of the effect of the Nauheim baths, which afford the heart so much rest, steady its contraction and improve its nutrition by the general tonic effect. These are greatly enhanced by the Swedish movements, the quiet life, careful attention to diet and general hygienic surroundings.

Hot Saline Springs.—This class of springs, which is favored by patients suffering from rheumatic troubles, abounds in Germany. As a good example, I may cite Aix-la-Chapelle, which I visited. This town lies on the main line between Cologne and Paris. The great advantage of Aix-la-Chapelle lies in the fact that nearly all the baths are situated in fine hotels. There is no necessity, as at Aix-les-Bains, for patients to be carried in sedan chairs from the spring to the hotel, as most of the hotels are provided with elevators and invalid chairs. Dr. Beissel claimed other advantages over Aix-les-Bains. The latter, being too gay, offers temptations to invalids for deviating from strict discipline, and that its waters, containing alum and lime in combination with the sulphur, are unfitted for drinking.

Dr. Beissel courteously accompanied me to all the old and new baths. The latter were being constructed in the most approved manner, heated by the water from the springs, which furnish an inexhaustible supply. I took a hot douche-bath, which resembled those for which Aix-les-Bains is so famous. The doucheur holds the hose with his left hand, with the right he envelopes the steam issuing from it and directs it to various parts of the body, grading its force by scattering. A fan is held by the patient to protect the face against scattering hot water.

The entire city is underlaid by the hot springs; in a distance of 1316 meters, the water issues from ten springs, while in the neighboring village of Burtscheid, a line of 1680 meters furnishes twenty-eight springs. Dr. Beissel pointed out to me the Kaiserquelle which has a temperature of 131° F. The coldest spring in Aachen is the Cornelius spring, the temperature of which is 110° F. Chemically these waters are alkaline, sulphurous, chlorid of sodium waters containing little gas, a small quantity of iodin

and bromin. In Burtscheid, a village lying about one mile from Aachen, the springs are of the same chemical composition, but hotter, the hottest being the Muhlbad, the temperature of which is 163° F. I saw children and women take this water to their kitchens in order to save fuel in cooking.

The affections chiefly treated here are chronic skin diseases, chronic metallic poisoning, gout, rheumatism, and syphilis. Indeed the value of these baths in the latter disease have produced such an afflux of syphilitics that the town has obtained quite an unenviable reputation, which prevents purely gouty, rheumatic, and other patients, from frequenting it. At least so I was informed.

My time being nearly exhausted I shall refer briefly to that portion of my subject, in which I am most deeply interested, *viz.:* hydrotherapeutic establishments and resorts. Of these I visited a large number in Germany, Austria, and France. Most of these institutions are situated in beautiful mountain nooks. There the patients may enjoy the purest air and feast their eyes on the most lovely scenery. Some are constructed on a very large scale. The great Augusta Victoria Baths at Wiesbaden is probably the largest institution. Among these may be mentioned Kaltenleutgeber, near Vienna, where the famous Winternitz presides, and Dr. Koehler's institute at Eisenach. The latter is a magnificently appointed building occuping a promontory from which the eye may roam over the loveliest scenery in all Germany, verdure of the deepest hue, well-tilled fields, romantic gorges, nature and art commingling, while just above upon a still loftier eminence lies that historic castle, the Wartburg, the home and refuge of Luther in the days of papal persecution.

Elgersburg, in the Thüringen forest, where the genial Barwinski has long comforted and brought back to health invalids sent by the most famous physicians in Germany, is one of the enormous "wasserkur" establishments, dating back half a century.

At or near each of these three towns mentioned, there are from three to ten smaller water-cure establishments. Allow me to state what is probably familiar to many of you—that the word water-cure means simply water-treatment, the last word being derived from cura—to care for. Its meaning differs, therefore, materially from the English word, cure. I was not favorably impressed with the methods pursued in most of these institutions. A lack of precision, already referred to in the treatment of phthisis, is evident. Water is still administered here in a somewhat inexact manner, little regard being given to pressure, somewhat more, but not enough to temperature and duration. Among twenty-eight institutions visited by myself, only three had pressure-gauges, none had any arrangement for ascertainably increasing with precision the pressure used, as may be done in the Hydriatric Institute of this city, in the German Hospital of Philadelphia, and other institutions in this country. Only four had fixed thermometers for ascertaining and regulating the temperature of the douches. Despite these apparent defects, the results obtained are marvelous, especially in gastric and nervous diseases. The reason for this success may be found in the fact that educated physicians preside over these institutions and do not entrust the treatment of patients to nurses, but either administer it themselves or supervise the water treatment. Of late years a more exact technic is observed, from which, doubtless, much better results will follow.

In connection with this subject it may be of interest to refer to the Naturaerzte with which Germany is now overrun. These are water-cure establishments conducted by all sorts of lay people, who have failed in other vocations. The largest institutions of this kind are in Chemnitz, and near Dresden, Saxony. These are presided over by physicians, and from them emanate most of the laymen who erect institutions. The great institution bequeathed by Zimmerman, a merchant, who claimed to have been cured by water, air, and diet after failure of the best physicians, was described in the *Medical Record*, in a letter contributed by myself, in the fall of 1890.

The sanitarium called Weisser Hirsch, near Dresden, is world-renowned. It lies about an hour from the city, on a wooded eminence occupying many acres of ground, owned and presided over by Lahmann, who is the high-priest of "natural treatment." It is unique in some respects. First, it has the poorest facilities for hydrotherapy which I saw in Germany. Second, it has an open-air cure, consisting of a fenced-in piece of woods, the soil of which is thickly covered with sand. Here men, completely nude, with the exception of light trunks, spend the entire day, playing ball or in other amusements, or lying on boards or cots. These people look bronzed and hearty.

Lahmann himself lives in a hut, the entire southern face of which is open; except in very inclement weather he wears no underclothing or socks, his feet being partly covered with the Kneipp sandals. This mode of dress is followed by most of the patients. Time will not permit further details. Thousands of people resort to Lahmann's institution with more or less success.

I visited some dozen institutions for "nature cure" in various parts of Germany; most of these are beautifully located, but being managed

entirely by laymen the treatment is very crude. It seems incomprehensible, as in Bettelsdorf, in Silesia, for instance, that a merchant is allowed to care for one hundred sick people without a physician. The director told me that his father was cured of rheumatism by water and diet after all the doctors had failed, hence his present vocation. While in Prussia these Naturaerzte are permitted to have institutions, in Saxony they are compelled to have a resident medical man.

The extent of my subject has admitted of but brief reference to each portion. It has been my aim to present to you a sketch of my observations in these health resorts which may give you a glimpse of their condition and methods, rather than enter into any theoretical discussion of the latter. In conclusion I may reiterate, as the result of study and observation of the subject, the statement made in my article on mineral springs in Hare's "American System of Therapeutics," Vol. I:

1. The accuracy of the results of balneotherapy is wofully marred by the bias due to one-sided study and observations of men, who, be they ever so honest, are more or less misled by their environment and by their advocacy of waters with which their interests are intimately interwoven.

2. The multiplicity of elements in the therapeutic problem, as bathing, drinking, and the various ingredients in the waters, climate, surroundings, diet and changed mode of life, render safe deductions difficult.

3. The results from drinking mineral waters containing, with the few exceptions of purgative and the strongest saline waters, a minimum of chemical elements, are to be ascribed chiefly, if not entirely, to their hydrotherapeutic effect—being practically the same as drinking pure water in the same large quantities.

4. The result from bathing in mineral waters is chiefly due to the temperature of the water and duration of the immersion. The experiments of Lehman, and others, with baths of ferrocyanid of potassium showed that not a trace was found in the urine, and after lithia baths not even the spectroscope could discover the faintest evidence in the urine.

5. Nevertheless, I believe that visits to mineral springs are of great value, because of the improved hygienic, atmospheric, and scenic conditions, the freedom from care and absence of business pressure, together with the stimulus of amusement and diversion, regular habits, strict diet and hygiene, drinking of large quantities of water which sweeps out effete material, and the valuable effect of baths which is enhanced by the saline, gaseous elements of the water.

A careful study of American springs (Hare's "System of Therapeutics," pp. 515–533) convinces me that we have in this country some of the highest types of mineral springs, and that if the physicians at these resorts would insist upon precision in drinking, diet, exercise, rest, sleep, and the proper adaptation of hydrotherapeutic effects, with the same emphasis as do the physicians at the European resorts, the annual exodus from the country would be greatly diminished.

A fertile field is open to the medical profession of this country, a field which if properly tilled not only would bear good fruit to numberless invalids, real or imaginary, but which would give recreation, change of scene, and work, and satisfactory financial results to many colleagues who now labor in crowded towns and cities during the hot summer months.

HEADACHES FROM NASAL CAUSES.[1]

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IN this paper I do not intend to dwell to any extent on the history of individual cases but to give a sort of abstract of experience, selecting as a basis for conclusions only representative cases which have been followed up carefully, a table of which is appended. Neither will I include those headaches associated with inflammatory disease of the accessory cavities, this latter affection having been so comprehensively written up during the past three years.

In a paper on "Hemicrania"[2] I have called attention to pressures within the nose as a cause of sick headaches and neuralgic affections. At that time it was felt that perhaps an apology was due for venturing on a subject so nearly barren of literature. Now I am pleased to find that others both here and abroad are giving the nasal passages due credit. As early as 1886 Dr. Harrison Allen of Philadelphia published a paper on "Headaches Associated Clinically with Chronic Nasal Catarrh."[3] The essay was comprehensive, replete with valuable deductions, and without doubt was the first published on the relation of headaches to intranasal conditions. In a foot-note he mentions a discussion touching on this subject which took place at the New York Academy of Medicine, January 21, 1886, but after his paper was written. In 1888 Dr. John O. Roe contributed a paper, entitled "The Frequent Dependence of Persistent and So-called Congestive Headaches upon Abnormal

[1] Read before the American Laryngological, Rhinological, and Otological Society, Washington, D.C., May 1, 1897.
[2] *New York Medical Journal*, March 31, 1894.
[3] THE MEDICAL NEWS, March 13, 1886.

Conditions of the Nasal Passages."[1] Aside from these, and the mention made of the nose as a factor by Dr. Wharton Sinkler in an excellent article on the "Etiology and Treatment of Migrain"[2] I have been unable to find record of any paper relating to this subject by American writers until that produced by myself in 1893.

From all data at command, I think Dr. Hack of Freiburg (quoted by Sinkler) was the pioneer in Europe in recognizing the fact that headaches sometimes come from nasal causes. Maximilian Bresgen of Frankfurt wrote a paper on "The Headaches in Nose and Throat Diseases,"[3] a copy of which he has courteously sent me. This article is very clear and concise, pointing out with detail the regions which most commonly produce headaches, and their great frequency as a symptom in nose and throat diseases. At a meeting of the British Laryngological Association, held in London, October 12, 1894, Mayo Collier reported a case of "Headache from a Diseased Middle Turbinal." Dr. J. H. McCassy of Dayton, Ohio,[4] in connection with his experience as superintendent of the Kansas State Insane Asylum, says: "As might be expected, headache is alarmingly common among the insane. I am convinced that hypertrophies, vasomotor rhinitis, polypoids, deflections of the septum, catarrh of the ethmoidal, frontal, and maxillary sinuses, etc., are frequently causes of headaches, and in not a few cases of insanity."

For a number of years past the neurologist and the ophthalmologist have had full sway in the treatment of these cases. They have published many valuable books and papers and should receive due credit. One of the recent productions is Corning's on "Headaches and Neuralgia." The author does not even speak of a possible nasal cause in his classifications, though he mentions at considerable length those termed nervous, toxic, bilious, etc. Errors of refraction must, of course, be corrected, but the rhinologist should have a place in this line of work. I have selected from my records thirty cases of cephalalgia that have been referred to me as a last resort by different physicians. These patients on examination appeared to be fit subjects to work upon and treatment was instituted. They do not include those met with in any hospital or dispensary practice, or those who have been mentioned incidentally during the course of ear or throat treatment, where nasal surgery has been a prominent feature, and by means of which their headaches had been cured. In this group of thirty patients I find that seven claim to have received relief to the extent of about 40 per cent., five 75 per cent., ten 90 per cent., and eight 100 per cent. A careful review and study of their records bring out some interesting points. Sixteen were treated between 1891 and 1894, giving from three to five years in which to judge of results. Ten of these show from 90 to 100 per cent. relief of their headaches. Twenty of the thirty cases were females. The youngest was seventeen and the oldest sixty-five years of age. Sixty per cent. of the whole number were from thirty to forty years of age. Seventy per cent. of these patients appeared to have hemicrania as a result of middle turbinate pressure. Of those reported as showing 100 per cent. relief, the whole number, eight, received a full and thorough operative course. Fourteen, because of their improved condition, stopped treatment before all the visible intranasal contacts and pressures were removed. The remaining eight had a complete operative course, but owing to the sensitive condition of their membranes they are yet having some headaches, though four are found in the 90-per-cent. class. Another notable fact deduced from these thirty cases is that of the sixteen who received a full operative course, twelve report from 90 to 100 per cent. improvement. Experience with other cases not mentioned in this list teaches me that about the same ratio of improvement (75 per cent.) will hold good in all headaches from nasal causes, if each and every point of pressure or contact is thoroughly removed. Operative work on these patients is what gives quickest and most brilliant results. It should be carried out with the fact in mind that the nasal membranes are very sensitive and prone to swell, and a little more of the offending overgrowth than is necessary to absolutely relieve the pressure should be removed, though not enough to impair the natural function of the nose.

Hajek of Vienna attributes the headaches so commonly met with after tamponing the nose and in acute coryza to a stasis. His opinion is that the veins passing through the lamina cribrosa give off one large branch to the dura mater, turn, and again enter the nasal cavities; these become engorged, press against the brain substance, and occasion severe pain. Schreck of Munich looks upon hemicrania, due to nasal and postnasal causes, as partly attributable to the hindered flow of lymph and venous blood from the brain. Dr. Robert C. Myles of New York writes me that in his opinion "vasomotor disturbances of this region or compression of the small nerves in the bony canals of the cribriform plate by the artery or vein will cause headaches under certain conditions." This theory of stasis produced by a

[1] *Medical Record*, August 25, 1888.
[2] THE MEDICAL NEWS, July 19, 1890.
[3] *Munch. Med. Woch.*, January 5, 1893.
Cincinnati Lancet-Clinic, September 5, 1896.

retarded circulation, coming as it does from three eminent and independent sources, should receive consideration. Perhaps it will explain why some twenty-five per cent. of our patients have an occasional return of their trouble after all visible pressures and contacts have been removed. According to some neurologists, it may be due to the fact that "all influences exerted upon the human body are to a greater or lesser degree cumulative, and the phenomena following these are proportionate to the response yielded by the receiving nerve-centers." Personally, I think that most of these recurring attacks are produced by the irritable and sensitive condition of the membranes, which favor congestion, with resulting pressure on sensitive areas.

In those cases of headaches from nasal causes which have come under my observation, but two can be recalled in which the patients at the time of their seizures did not show some point or points of contact within the nasal fossæ. Their relapses may be due to stasis as mentioned above. It has been noticed that they as well as others are kept very comfortable if weekly or biweekly stimulating applications be made in order to keep the relaxed and sensitive membranes in proper tone. The treatment that appears to act best in producing this result is a gentle spraying of the parts with iodole and ether, the patient being instructed to breathe through the nostrils quickly if the application produces too much smarting pain. Three grains to the ounce of this mixture is a good strength for these tonic treatments, and the same combination, preceded if necessary by a two-per-cent. cocain spray to allay smarting, is very efficacious in reducing acute or subacute nasal and postnasal inflammation. In fact, it is good in temporary turgescence from any and all causes.

Without doubt some cases of migrain are of the nature of "nerve storms" and are closely allied to epilepsy, but it appears very probable that these nerve storms are primarily brought about by some irritation of a nerve filament, such as is produced by contact of the inner surface of the middle turbinate body with the septum.

My paper on "Hemicrania," written in 1893, contained the proposition that there are a certain number of headaches which can be cured, or at least relieved, by the proper treatment of pressures or contacts within the nose. Added experience during the past four years, together with the observations of other workers, has amplified this idea until it surely appears that we are safe in advising those who come to us with a history of persistent or recurring neuralgia, clavus, sick headache, pressure on top of the head, or the deep frontal pain commonly termed catarrhal headache, to have their nasal and postnasal passages put in the best possible condition. I am about ready to believe that from 70 to 80 per cent. of all cases of headaches of hemicranial order are due to removable causes located within the nasal passages or adjacent air spaces.

As intimated above, the treatment *par excellence* for these obstinate cases in which we find evidence of nasal disease of whatever nature is the correction of that disease by the means indicated. If we have reason to think that the trouble comes from the accessory sinuses these must be drained. If the space between the septum and a middle turbinated body is too narrow, or if this same body is overgrown anteriorly or presses against the outer wall of the nose, preventing free access of air into or drainage of the sinuses, it must be reduced in some manner. If bony shelves, membranous or cartilaginous thickenings causing pressure are found, these should be taken care of. In some cases one fails to find any of these deformities, and perhaps at the time of examination there are no points of contact, but it will be noticed that the membranes are of a peculiar bluish-red color, and have a sensitive or relaxed appearance which is an indication that within the next half hour there may be some localized spot of pressure. This condition does not require operative interference, but will usually respond to persistent and stimulating treatment, together with proper regulation of the habits, manner of living, exercise, etc., and, according to Roe, if the patient resides in the Lake region, avoiding too great a quantity of night air in the sleeping apartment.

One word further, regarding those patients suffering from an attack of headache, who ask for temporary relief. Inspection of their nasal passages will perhaps show marked pressures in the olfactory region, which may be due to an acute or subacute inflammation without much chronic disease, and without osseous deformity or overgrowth. About ninety per cent. of these patients can be relieved in one or a few treatments by cleansing the nostrils, and using the iodole and ether mixture, preceded by a light two per cent. cocain spray, as described above. Sometimes this will have to be repeated in four or five hours, but one treatment usually breaks up an attack. Cases number 22 and 27 in the appended table well represent this class.

The desire to be brief has hindered me from quoting other authors, who have written on headaches, and forced me to leave out many things that I would have liked to mention; still I hope that proof enough has been brought forward to cause the rhinologist to take a more active interest in reflex headaches.

No.	Name.	Age.	Began treatment.	Relieved.	Intranasal conditions.	Remarks.
				Per cent.		
1.	Mrs. K.	32	April 16, 1892	40	Deep bony shelf pressing into r. mid. turb.	Severe sick headache each week.
2.	Miss J.	32	Aug. 18, 1892	40	Enlarged mid. turb.	Bimonthly sick headache.
3.	Mrs. F.	45	Nov. 5, 1892	75	Enlarged mid. turb.	Bimonthly hemicrania.
4.	Mrs. L.	35	Dec. 3, 1892	40	Septal shelf pressing inf. turb.	Severe hemicrania at times each week.
5.	Miss H.	25	Oct. 7, 1892	100	Septal shelf pressing inf. turb.	Frequent hemicrania.
6.	Mr. K.	56	April 14, 1892	100	Enlarged mid. turb. with thickened membranes.	Severe hemicrania trimonthly.
7.	Mrs. Y.	55	Feb. 23, 1892	100	Septal shelf and deflected septum.	Clavus and general headaches.
8.	Dr. S.	30	Mar. 23, 1892	90	Deflected septum pressing r. mid. turb.	Hemicrania once a week.
9.	Miss G.	32	May 9, 1892	90	Deflected septum, large shelf, and mid. turb.	Severe hemicrania. Died of general tuberculosis in 1895.
10.	Miss F.	25	Nov. 17, 1892	75	Deflected septum, large shelf, etc.	Severe hemicrania, when she has colds.
11.	Mrs. C.	35	Jan. 17, 1893	75	Enlarged mid. turb.	Severe weekly hemicrania, pressure on top of head.
12.	Mrs. R.	50	Oct. 26, 1893	90	Atrophic rhinitis, enlarged turb.	Persistent general headaches almost constant.
13.	Miss C.	17	June 24, 1893	90	Enlarged mid. turb.	Headaches and pressure top of head bimonthly.
14.	Mr. C.	38	May 18, 1893	100	Septal shelf and thickened mid. turb.	General headaches.
15.	Miss B.	19	Mar. 23, 1893	100	Septal shelf and swollen mid. turb.	Severe sick headache bimonthly.
16.	Mr. M.	36	April 20, 1893	100	Septal shelf and swollen mid. turb.	Severe sick headaches bimonthly.
17.	Mr. S.	38	May 21, 1894	40	Long shelf pressing into mid. turb., etc.	Severe hemicrania once a week.
18.	Miss R.	26	June 27, 1894	75	Deflected septum, mid. turb., filling infundibula, r. s.	Hemicrania bimonthly.
19.	Prof. K.	36	Jan. 17, 1894	75	Thick membrane and enlarged turb.	Severe and frequent hemicrania.
20.	Dr. L.	27	Dec. 29, 1894	90	Cartilagenous thickening, pressing mid. turb., l. s.	Severe frontal headaches, trimonthly.
21.	Miss S.	65	April 18, 1894	90	Deflected septum pressing l. mid. turb.	General headaches.
22.	Mrs. B.	33	May 11, 1894	90	Thickened membrane on mid. turb. and septum.	Frequent headaches.
23.	Miss W.	33	Nov. 2, 1894	90	Mid. turb. pressure on septum.	Neuralgia and severe headache.
24.	Mrs. H.	32	Jan. 7, 1894	100	Mid. turb. pressure on septum, filling infundibula.	Very frequent, severe sick headaches.
25.	Mr. C.	35	June 4, 1895	90	Thickenings and enlarged mid. turb.	Severe neuralgia, and hemicrania.
26.	Mr. N.	28	Feb. 6, 1896	40	Septal shelf, and thickened membranes.	Catarrhal headaches.
27.	Mrs. L.	40	Oct. 1, 1896	40	Swollen and sensitive membranes over mid. turb.	Severe hemicrania, when she has cold.
28.	Dr. B.	40	Oct. 10, 1896	100	Septal shelf, and sensitive membranes.	Frequent general headaches.
29.	Mrs. T.	37	Nov. 5, 1896	90	Enlarged mid. turb.	Very severe, sick headaches twice a week.
30.	Mr. S.	45	Oct. 2, 1896	40	Enlarged mid. turb., and polypoid membranes.	Hemicrania twice a week.

THE MICROSCOPIC EXAMINATION OF MILK.[1]

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BEFORE considering the benefits to be derived from the microscopic examination of milk, it may be well to consider briefly the subject of milk as an infectious agent. It is well known that the presence of the bacillus of tuberculosis has often been demonstrated in the milk obtained from tuberculous cows. Clinical experience, especially with babies and young children who derive their entire sustenance from this fluid, would also go to show that many cases of intestinal tuberculosis are due to drinking milk from tuberculous animals.

Milk also is a very favorable medium for the development of many other pathogenic bacteria, and the accidental introduction of such bacteria as the typhoid bacillus, the anthrax bacillus, or any other of the pathogenic organisms may give rise to the specific diseases caused by these germs in those who drink such a contaminated material. It is not the purpose of this paper to deal further with this subject, since the microscope could hardly be used as a routine method of deciding such conditions, even when present. The microscope is often of great

[1] From the laboratory of the Health Department, Baltimore, Md.

use, however, in detecting a serious contamination in milk, namely, pus; and the presence of this product of inflammation in any considerable quantity generally points to the existence of some inflammatory condition of the teats or udder of the cow supplying this fluid. Such a condition in cattle is known as "garget," and this disease has been studied by numerous observers, and the causes which bring about this trouble have been duly noted. This work was mentioned in a paper, entitled "An Epidemic of Purulent Inflammation of the Milk-ducts Affecting Seventy Cows,"[1] by W. R. Stokes and A. W. Clement, State Veterinarian, in which it was stated that most investigators consider garget as caused by some local injury to the teat or udder, followed by a secondary invasion of the injured area by the pyogenic bacteria. The organisms may cause an extensive inflammation, and the milk will then not only contain many pus cells, but what is more injurious, the various bacteria, which have produced the pus in the udder.

The above article also described an epidemic of purulent inflammation of the milk-ducts affecting seventy cows. This condition did not arise from any local injury to the udder, but seemed to be due to the infection of a few of the herd by means of a sore finger of a milker, and the gradual transference of the disease from animal to animal, through the hands of the other milkers. Garget is a far more frequent condition than many people suppose. The writers have been struck with the number of instances in which it has been detected in large or small herds supplying various individuals or communities.

One should not be too hasty in condemning a sample of milk merely because it contains a few pus cells. It has been the custom at the laboratories of the city Health Department of Baltimore to make a microscopic examination of the samples of milk as they reach the city consumer. The milk is first centrifugalized two and one-half minutes by means of the Lentz centrifuge. Ten cubic centimeters of milk is used in each tube. The supernatant fluid is then poured off and the sediment is spread evenly over the surface of an ordinary glass slide. The specimen is then dried over the flame of a Bunsen burner, or in a water evaporating oven. Ether is then applied until all superfluous fat is removed, and the slide is stained with Löffler's methylene blue. This method not only forms a ready means of detecting the presence of pus, but if the specimen be taken from any one cow, an excessive amount of pus cells can also be noted. The examinations are made with a one-twelfth-inch oil immersion lens. It has been found from a number of examinations that most samples of milk mixed from a large herd will contain a few pus cells. On the other hand, when the samples have been taken from individual cows, many more pus cells have been found. Inspection of such animals later showed that such a condition was due to suckling calves, local abscesses, or purulent suppuration of the milk-ducts — processes which at times might have escaped even the notice of a skilled observer. From what has been said, it will be seen that milk as a general food product must certainly at times contain bacteria capable of producing disease.

Let us next consider the evidence in favor of the view that such bacteria when introduced into the intestinal canal may give rise to such conditions as acute or chronic gastro-enteritis. The writers are not aware of any experimental work upon animals which proves that the introduction of the ordinary pus organisms into the intestine will give rise to conditions resembling these just mentioned. We are in possession of some facts, however, which are perhaps quite as convincing.

Dr. Booker of Johns Hopkins University, in his most elaborate and complete researches on "Summer Diarrheas of Infants," brings out very clearly the relationship existing between certain forms of gastro-enteritis and the streptococcus. In a certain number of these cases which were marked by symptoms of general infection, the streptococcus was found in cultures from the intestines, and the presence of these bacteria could also be demonstrated in the various inflammatory intestinal lesions by means of special bacterial stains. Eleven cases of streptococcus enteritis were also mentioned as reported by other authors. There can be but little doubt, therefore, that the streptococcus is largely concerned in producing certain forms of intestinal inflammation, while the researches of Escherich and others show that this organism is only an occasional inhabitant of the intestinal canal, and when present that it is only to be found in small numbers.

In view of what has been stated a detailed account is offered of an epidemic of mild gastro-intestinal irritation in which the most reasonable explanation of the cause seems to be the drinking of milk containing the products of acute inflammation from a diseased cow. The following notes were kindly made by Dr. Henry Lee Smith of Baltimore during the absence of the writers from the city:

In one of the educational institutions of this city, some of the inmates were suddenly seized with marked nausea, vomiting, and purging. Dr. T. J. King was called upon professionally, and states that during the next few days a number of other children were similarly attacked, making twenty in all. The ages of the young girls were from eight to four-

[1] *Maryland Medical Journal*, January 9, 1897.

teen years, and the symptoms were not of sufficient gravity to require the patients to be put to bed. After careful inquiry, it was found that the food had been both simple and nutritious, and reasoning by exclusion, the milk was thought to be at fault.

A mixed specimen was carefully bottled at the dairy, and sent to the Health Department for microscopic examination. The supply was ordered to be discontinued until favorably reported upon. Meanwhile there were no further interruptions in the good health of the inmates in the institution.

The writer, accompanied by Dr. Cornelius, Veterinarian to the Health Department, visited the herd supplying the milk, and found one of the cows suffering from a swollen udder. The dairyman thought that it had been bruised by one of the neighboring cows lying on it. The hands of the men employed about the stables were examined and found free from infected wounds. The examination of the affected udder showed a slight abrasion, with marked swelling, tenderness, and elevation of temperature. The teat was well cleaned, and a thick, yellowish fluid was squeezed from the milk-duct, and caught in a sterile tube. There was no contact between the teat and the tube.

A microscopic examination showed that this fluid consisted almost entirely of pus cells, together with numerous streptococci; and a plate culture in agar gave a pure growth of an organism corresponding in every particular to the streptococcus pyogenes. This organism did not prove virulent when inoculated into a white mouse. Separate mixed specimens were then taken from the milk of each of ten cows of the herd. These were later centrifugalized and stained according to the method described above. The milk of eight cows was found practically free from pus, but the mixed specimen from the entire herd contained many pus cells and streptococci, and the milk from two of the cows contained an average amount of about 10 to 20 pus cells to the microscopic field.

The owner of the herd showed a commendable willingness to co-operate with the Department, and these two cows, together with the first diseased cow, were removed from the stables. An examination of this same stable, made one week later, from the separate specimens from eleven cows, showed that their milk was free from pus, and a second examination made at the end of another week, showed that the milk from the entire herd was practically free from any purulent material.

From the experience above narrated, we thought it probable that the milk from many individual cows must contain varying numbers of pus-cells. We next undertook a series of investigations in order to arrive at a definite conclusion concerning the number of cows practically free from pus, and the varying number of pus cells present in the milk of cows kept under different conditions. After carefully washing the teats, the first milking from each of the four teats was drawn into a sterile tube. While still fresh, the milk was examined according to the method described above. The averages are all based upon counts of ten microscopic fields with the one-twelfth-inch oil immersion lens and represent the average number of pus-cells in each field. The summary below will show at a glance the difference between cows kept under varying circumstances. They are graded according to the following conditions:

No. 1 consists of one hundred cows in the country, kept in a well-ventilated stable with good roomy stalls, and good pasturage. They are fed while in the stable on bran, ground corn, and hay. The cows are curried and cleansed daily. The herds are inspected by competent veterinary surgeons, and all sick animals are isolated. The usual precautions regarding cleanly milking are observed.

No. 2 consists of fifty cows in the country having badly ventilated stables, narrow stalls, and bad pasturage. They are fed on distillery grains, cut hay, and bran, the precautions mentioned above as regards inspection and cleanly milking not being observed.

No. 3 consists of one hundred cows kept in the city, always confined to stables, with narrow stalls, no ventilation, light, or pasturage. They are fed on brewery grain, distillery slops, bran, and hay. The cows, as a rule, never leave the stable until they go dry or are taken out to be exchanged. The milk was furnished by the city veterinarian, Dr. George C. Cornelius, who was careful to select different sections of the city, and who personally superintended the drawing of the milk. A summary of the results of the examinations of the three grades is as follows:

Grade No. 1 gave a general average of 1.1 pus cells to the field.

No. 2 gave an average of 11.3, while No. 3 showed 19.2. In herd No. 1, practically no pus organisms such as streptococci or staphylococci were found. Herd No. 3 showed streptococci present in large numbers by cover slip in eight instances. The regular nucleus of the epithelial cell enabled us to exclude these bodies in our counts. The milks mixed from the various herds of grade No. 3 showed streptococci, other bacteria and pus. The highest number of pus cells in any one cow was 158.5 to the field. The lowest in grade No. 3 was .1, and there were only 5 which gave this percentage, while in grade No. 1 there were 45. Seventy-five cows gave an average in grade No. 1 of less than one cell to the field, while in grade No. 3, out of 100 cows, there were 12; 93 cows out of 100 in grade No. 1 gave less than 5 cells to the field, while in grade No. 3, 38 gave this average; 98 cows out of 100 in grade No. 1, gave less than 10 cells to the field; in grade No. 3, 54 out of 100 showed this number.

Conclusions.—Garget, or inflammation of the ud-

der and teats, is a not infrequent condition among the many herds supplying milk to various cities or communities.

Milk from such animals often contains many pus cells, and the accompanying organisms of suppuration.

The study of the epidemic just described, as well as the important work of Booker and others, certainly strongly suggests that such milk is capable of causing the various forms of gastro-enteritis, especially in children and infants.

The microscopic examination of the centrifugalized sediment of the milk from a herd of cattle if found to contain an excessive amount of pus, should suggest a careful inspection of the herd.

The chance of infection from drinking milk from a large herd can be lessened by making a microscopic examination of the centrifugalized specimen from each cow, and by the exclusion of such cows from the herd as may be found to contain an excessive amount of pus in their milk.

The standard for exclusion must of necessity be arbitrary, but following the method above described, an average of more than five pus cells to the field of the oil immersion lens should exclude an animal from the herd.

Our results lead us to the conclusion that cows kept in the country, under the conditions noted in regard to grade No. 1, will furnish milk less capable of causing disease than the milk furnished by grades No. 2 and No. 3.

In Baltimore, a city of 500,000 inhabitants, there were 412 deaths from cholera infantum during the year of 1896. This disease is more prevalent among children using cows' milk. We believe that proper legislation looking to the examination of dairy herds and the supervision of dairy stables in the entire State would prevent many deaths from the various intestinal inflammatory diseases. Such legislation seems already practically embodied in "An ordinance to better protect the public health," approved by the Mayor of Baltimore, April 21, 1896, and which might be applied to the entire State.

We would respectfully suggest that the proper food be more clearly stated, and that distillery slop and brewery grains be prohibited as an exclusive diet. It is not claimed that milk which has not undergone such tests will necessarily cause disease, but certainly the adoption of such measures will tend toward securing a purer milk supply and lessening the danger of disease through infected milk. We are indebted to Dr. James F. McShane, Commissioner of Health, for his valuable advice, and the interest which he has shown in our work.

CLINICAL MEMORANDUM.

TUMOR OF THE SPINAL PIA, FIRST CERVICAL SEGMENT, MISTAKEN FOR HYPERTROPHIC CERVICAL PACHYMENINGITIS.[1]

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THE symptomatology of intraspinal tumors, whether they be of the dura, the pia, or the medulla, is not so definite and unvarying that the recording of such an occurrence, with a description of the location and confines of the lesion, should not be of deep interest to every physician. In the following history there are many hiati, but we shall endeavor to make it serve as a text for a few remarks concerning the differential diagnosis of tumor of the spinal meninges and of the cord and hypertrophic cervical pachymeningitis, for which this case was mistaken by the physician who saw him when the symptoms of the neoplasm were well developed.

C. L., a single man, thirty-six years old, of intemperate habits, was admitted to the City Hospital on February 5, 1896. He was said to have had rickets when a child. About twenty years ago, that is, in his seventeenth year, he contracted a chancre, which was followed by the usual secondary manifestations of syphilis. Treatment for the syphilis was carried on only while there were external syphilitic manifestations. Until the present illness he had been quite well. Nine months before entering the hospital he complained of pain in the back of the neck. This gradually crept toward the front of the neck and implicated the right side of the face. The pain at first was sharp and lancinating, but after a few months its character changed, and it became lancinating only at intervals; in other words, the pain, although continuous, became paroxysmal. At this time the patient was unable to move his head readily. He assured us that this spasticity or rigidity of the neck occurred in attacks, and that these coincided with the paroxysms of pain. After a month, or longer, that is, about four months before coming under observation, the head and neck became fixed.

Two months before he came to the hospital he remarked that he was losing the strength of the left arm, and he complained of paroxysmal pains in this region. Upon admission, he complained of being extremely nervous, that he could neither sleep nor eat, that he suffered pain in the back of the neck and head and in the left upper extremity, that the left side of the body was becoming feeble, and that he was growing weaker day by day.

The following conditions were noted in the examination made when he was admitted: The patient maintained the cephalic extremity in a fixed position, and when he turned to the right or to the left the entire body rotated. The left side of the body, particularly the left hand, was weaker

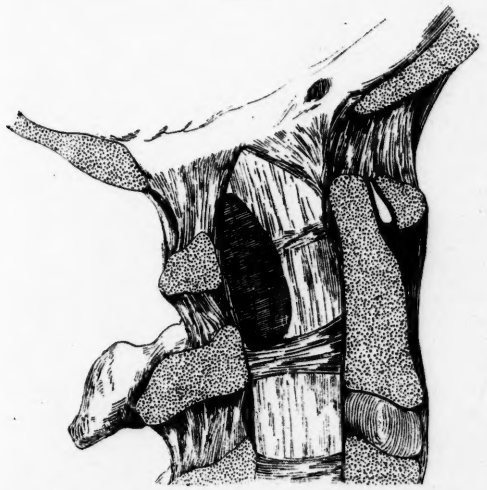
[1] Read before the New York Neurological Society, June 1, 1897.

than the right. The knee-jerk of the left side was much exaggerated, and the triceps and wrist reflexes of the same side were lively and exaggerated. When the patient walked he dragged the left foot and progressed with a swaying movement of the body—a slightly hemiplegic gait. There was no muscular atrophy nor any deformity.

The strength of the left upper extremity became progressively impaired, and he soon was unable to use it. The left hand assumed a slightly flexed condition, but not the "claw-hand" shape. There was no impairment of the sphincters up to this time. The bowels had been very constipated. On May 7th a diarrhea set in, which lasted until the time of his death, a month later, and which was not influenced in the slightest by treatment. Shortly after the onset of the diarrhea there was persistent incontinence of feces. The vesical sphincter did its duty until near the close of life.

The patient made pretty continual complaint of severe pains in the neck and both upper extremities and, later, of pain extending into the legs. As the disease progressed, the rigidity of the neck became less, the left upper extremity, which was in a state of beginning contracture when he was first examined, was almost flaccid, and all the extremities became relaxed, yet, withal, the deep reflexes, the knee-jerks, and the elbow-jerks on both sides were very much exaggerated. Whether or not the state of sensory conductivity was investigated cannot be stated, as there is no record regarding it. On February 2d the diagnosis of pachymeningitis cervicalis hypertrophica was entered on the record. The patient continued to complain bitterly of pain, and about a week before his death, on June 8th, he became delirious, and remained so to the end. An autopsy was made a few hours after death. The spinal canal was laid open from the base of the skull to the sacral region. Nothing noteworthy was encountered until the spinal pia came into view. This was seen to be distended and glistening. On puncturing it over the dorsal region, a quantity of clear cerebrospinal fluid escaped, and the pia then lost the distended appearance. On the posterior surface of the pia, beginning with the first dorsal segment, small white patches or flecks were seen scattered irregularly down as far as the lumbar region. On examination they were found to be calcareous. The pia was neither thickened nor adherent, and the dura was glistening and translucent. The cord itself did not present any abnormality as it lay in the spinal canal, and the cervical region was equally free from disease, as thus seen, as any other portion of the cord. The cord was then left *in situ* and the cranium opened.

FIG. 1.



Longitudinal section of spinal column, showing relative position and size of tumor.

The skull was of usual thickness. The veins of the diploë were somewhat congested. The membranes of the brain were of normal appearance. There was no excess of intermeningeal fluid, and the brain itself appeared normal. The encephalon and the spinal cord being completely exposed, a tumor was found lying on the posterior surface of the cervical cord, reaching from the lower border of the oblongata as far as the second cervical segment. The tumor was of the pia, but lay immediately against the cord substance, and measured 3.2 cm. in length, 2 cm. at the widest part, and 1½ cm. at the narrowest end, which was directed upward. The tumor projected slightly into the foramen magnum, but did not exert any pressure at this level. The encroachment upon the spinal cord seemed to begin about half a centimeter below the oblongata-cervical junction. Further examination of the brain failed to show any deviations from the normal.

The *post-mortem* examination of the body revealed an extensive pyelitis of the right kidney, a similar condition, though less marked, of the left, and a very pronounced hypertrophy of the bladder walls. The liver showed interstitial changes, and the apices of the lungs beginning tuberculous involvement. No changes were found in the intestines which would account for the diarrhea from which the patient suffered during the last few weeks of his life. The extremities were in a relaxed state, and careful measurements made at this time showed no difference in the size of the two sides.

On macroscopic examination of the tumor in the recent state, it had the appearance of a sarcoma, or gliosarcoma. It was of a dark reddish color, and was very firm to the touch. It was hardened in alcohol, the cord being placed in Müller's fluid. Microscopic examination of the tumor showed its essential structure to be that of a spindle-cell sarcoma with relatively enormous blood-vessels, some of which, especially the smaller ones, were occluded with hyalin material. Here and there throughout the tumor were signs of recent small hemorrhages, indicating the rupture of the smaller degenerated vessels. In the environment of the vessels which showed most profound degeneration large foci of cheesy degeneration were found.

Examination of the cervical cord, hardened in Müller's fluid and stained with hematoxylin according to Weigert's method, showed that the compression to which the cord had been subjected had largely expended itself on the

crossed pyramidal tracts, in which it had caused descending degeneration of a mild nature, and on the columns of Burdach, which showed an ascending degeneration of a degree even milder than that in the pyramidal tract. Aside from the change in the contour of the cord, insignificant vascular changes, and what appeared to be a slight degree of perivasculitis in the ventral horns, the cord was normal. To recapitulate briefly, the symptoms in this case were:

1. Pain, at the onset, in the back of the neck, later extending into the side of the face, and into the upper extremities, and later yet into the lower extremities.

2. In the beginning the pain was continuous, and of a dull, irritating character; later it occurred paroxysmally, and was of a lancinating nature.

3. A feeling of tension and spasticity in the cephalic extremity, and to a lesser degree, in the upper extremities, more particularly in the left arm.

4. Progressive loss of strength in the left upper extremity, and to a lesser degree, in the left lower extremity.

5. Exaggeration of the deep reflexes. In the beginning this exaggeration was of the left side alone, but later increased myotatic irritability was universal.

6. Progressive flaccidity of the parts which had previously shown a state of tension or spasticity.

7. Progressive and uncontrollable diarrhea.

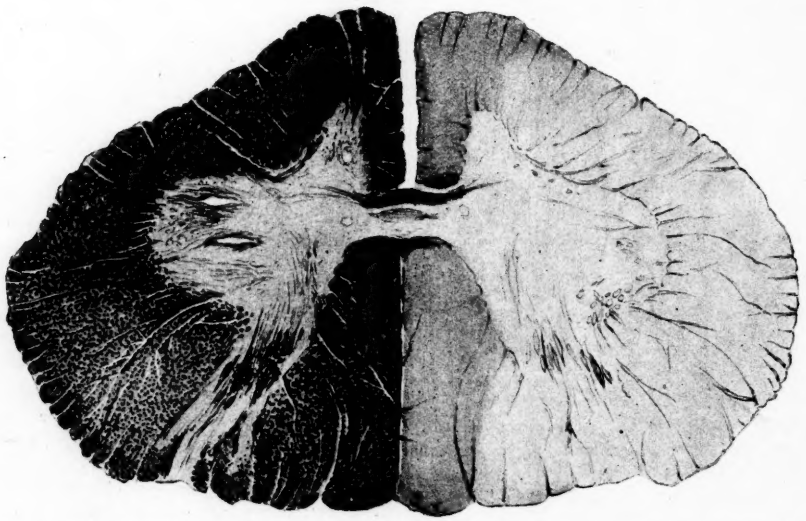
8. Symptoms referable to deranged intracranial circulation, pressure, and delirium.

If we contrast these with the symptom complex, which Charcot and Joffroy first claimed was sufficiently characteristic and constant of a form of cervical pachymeningitis to entitle it to individual classification, we shall see that although the symptoms, which the patient had, belong to the complex of symptoms constituting the latter disease, some symptoms were lacking, the appearance of which one should perhaps always await before consenting to make a diagnosis of hypertrophic cervical pachymeningitis. The occurrence of the symptoms of the latter affection fall into two distinct periods or epochs, corresponding to well-defined anatomic conditions. These are, first, a period of pain and rigidity of the muscles of the cephalic and upper extremities which indicates encroachment of the pathologic process upon the spinal roots, particularly the posterior, and, second, the period of paralysis, contracture, atrophy, and deformity, particularly of the upper extremities, which correspond to the implication of the substance of the cord by the morbid condition and degenerative changes of a secondary nature in the peripheral nerves.

The pain of cervical pachymeningitis is not unlike that complained of by the patient in this instance. It is located at the outset in the back of the neck, but soon extends toward the front, and to the sides of the face. Later, the large joints of the upper extremities often are the points to which the intensest suffering is referred. At the outset, this pain is continuous, but after a few months or less it occurs in paroxysms. The rigidity of the upper part of the body and the paresthesia which occur at this time remind one of cervical caries.

Until other symptoms develop, it is impossible to make a positive diagnosis. The paralysis and atrophy of the muscles which follow and the deformity are considered to be quite typical. The paralysis of the upper extremities and the atrophy is mainly in the domain of the ulnar and median nerves. This atrophy causes the development of the "claw-hand," which is perhaps the most constant feature of cervical pachymeningitis. It is the immediate result of flexion of the fingers, due to paralysis or degeneration of the median nerve, and extension of the wrist,

FIG. 2.



Cervical cord at the level of the third cervical nerve, showing degeneration of the pyramidal tracts and column of Goll.

on account of the ulnar-nerve disability, the action of the posterior interosseous being unopposed. Atrophy of the muscles of the upper extremities may be very extensive and the spasticity and fixation of the joints be as pronounced as in a case of amyotrophic lateral sclerosis. The disturbances of sensibility are not constant and vary with the degree of encroachment made by the morbid process on the dorsal surface of the cord and the posterior roots. Some degree of sensory disturbance is always present. The occurrence of other symptoms with hypertrophic cervical pachymeningitis points to secondary changes in the cord due to implication of the descending tracts, principally, and are those of a more or less diffused myelitis.

In the case here reported, then, it would appear that there were lacking symptoms that should be present to warrant a diagnosis of cervical hypertrophic pachymeningitis. Moreover, the course of the disease, the unfolding of the symptoms, and especially the irradiation, the character and intensity of the pain, should have suggested the possibility of intraspinal tumor. It is unfortunate that no record was made of the sensory disturbances, as it would count for much in favor of a tumor if the distribution of some form of anesthesia had been present with anything approaching regularity.

The question of the symptomatology of intraspinal tumors is to-day a very legitimate subject for debate. There would seem to be nothing like unanimity among different writers as to what constitutes the symptomatology of growths situated within the spinal canal. As a matter of fact, when it is said that the symptoms depend very largely upon the position occupied by the tumor, to a less extent upon the location, and to a comparatively slight degree upon the size and nature of the growth, all is said that can be stated truthfully. We have become so accustomed to a moderately unvarying symptom complex resulting from intracranial growths, and which, so far as we know, is dependent upon a perversion of intracranial pressure, that unthinkingly we believe that something similar should be present in the case of intraspinal tumor. As a matter of truth, there is not. Intraspinal pressure counts for very little or nothing, and this because of the entirely different interrelationships between the coverings of the cord, constituting the important lymph spaces, and those existing between the brain and its coverings.

It seems to me a matter of sufficient importance to deserve especial attention that oftentimes tumor symptoms are principally root symptoms, even until late in the course of the disease. Before they cause cord symptoms, death usually overtakes the patient, unless the tumor is of the cord itself, or unless it is a tumor that grows rapidly and thus causes early spinal-cord implication. In the case reported, the root symptoms dominated until the end, and the symptoms were never of such a nature that it could be said that the substance of the cord itself was involved. The obstinate diarrhea from which the patient suffered was, I venture to believe, a symptom referable to the sympathetic system, and was caused by implication of sympathetic fibers entering with the posterior roots. Whether or not there were other sympathetic vegetative symptoms I cannot say, as the patient did not come under our observation until a few days before his death, when he was in a state of profound collapse, and no notes had been made of such conditions in the case-book.

It would be easy to theorize on the relationship of the disease of the urinary organs to the sympathetic system and to the cervical cord, but I prefer merely to record its occurrence.

MEDICAL PROGRESS.

The Bacterium Coli in the Urinary Passages.—The presence of the bacterium coli in the urinary passages according to MELCHOIR (*Centralbl. für d. Krank. d. Harn. und Sexual-Organe*, vol. viii, p. 242) is responsible for most cases of infection of the bladder, and also for most cases of pyelitis, pyelonephritis, and nephritic abscess. These affections are not to be regarded as separate disorders, but as results of one common cause—the infection locating itself according to circumstances in one or the other portion of the urinary tract. These views are not those of the writer alone, but are shared by numerous others whose published opinions are quoted by him.

GRAF (*Deut. Med. Woch.*, No. 38, 1896) examined, bacteriologically, two cases of pyelonephritis and found in one the bacterium coli and in the other a bacillus similar to this. The origin of these bacilli was not evident, nor could Graf determine the route by which they reached the kidney.

"Bi-Polar Pressure" in Cases of Doubtful Fracture.—A writer in *La Presse Medicale*, May 15, 1897, calls attention to a means of differentiating between contusions and fractures—a point which, by the way, must have occurred to many others. As the pain in contusions may be very great, it is desirable to distinguish this pain from that caused by a break in the bone. If lateral pressure is made this cannot always be done, but, on the other hand, if pressure is applied at the ends of the bone—on elbow and shoulder in case of the humerus—pain will be present in fracture and absent in contusion. This method of examination is spoken of as "bi-polar" pressure.

Albuminuria of Delirium Tremens.—LIEPMANN (*Arch. für Psych.*, etc., 1896, vol. 28, No. 2) examined seventy-two patients suffering from delirium tremens, of whom fifty-six, or seventy-six per cent., had albuminuria, which, in forty cases, was only transitory. In sixteen cases the albuminuria appeared to be permanent. Seven of these patients died; five of them had nephritis, but the cause of the albuminuria in the other two was not evident.

The most important symptom, as an index of the delirium, was the pulse, which increased with commencing mental disturbance, and fell when the brain began to clear. In most cases there was no fever. Usually the albuminuria rose and fell with the pulse, and the delirium had no connection with the fever. The degree and kind of delirium was not different in those cases without albuminuria than in those in which it was present.

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SATURDAY, JULY 3, 1897.

WHEN MAY A SYPHILITIC MARRY?

THE earliest date after infection at which a syphilitic may marry without danger of communicating syphilis directly or by heredity is gradually being advanced by those who have carefully studied the subject. Some years ago Fournier and Besnier said that an individual properly treated might marry with impunity four years after the initial lesion. Recently Besnier has extended the time to five years. Even this long period seems too short in some instances. Thus, Morel-Lavallee, in the *Rev. de Therapeut. Med.-Chirurg.*, November 15, 1896, has collected from the literature thirty-seven cases, to which he adds a thirty-eighth, in all of which infection took place more than five years after the initial lesion. In all of these the contagion was spread from a so-called secondary lesion.

Perhaps the most remarkable paper recently published on this subject is that of Tarnovski, which was read before the last Congress of Dermatology held in London. Of 1000 cases of syphilis which were under observation for more than five years, all exhibited condylomatous lesions for three years or more, while 802 exceeded that period by two years. No less than 200 (twenty per cent.) showed "secondary" symptoms after five years, and in 31 cases there were secondary lesions after ten years. It ought, therefore, according to Morel-Lavallee, to be the invariable rule to allow at least five years to elapse before marriage; but this should not take place even then until a year has passed since the disappearance of secondary symptoms in a person not given to recurrence of mucous placques or erosions of the lips or tongue.

A NEW SPECIFIC FOR TUBERCULOSIS.

THE report of a new treatment of pulmonary tuberculosis by a modified tuberculin elaborated by Hirschfelder at San Francisco, which was published in the last number of THE MEDICAL NEWS, will doubtless attract considerable attention from clinicians and pathologists.

From its pathologic standpoint the article gains consideration as presenting the results of carefully conducted laboratory experiments. That the tubercle bacillus should be destroyed by the action of its own product slightly altered, as by oxidation, is not at all improbable but rather in line with some well known observations in bacteriology. Such a view is, however, not in accord with the generally accepted opinion that specific immunity is the result of an entirely new substance different from the bacterial toxins and produced in the organism as a secondary result of the action of these toxins and bacteria. Proceeding on this basis Koch has been laboring for years in the endeavor to so thoroughly distribute the tubercle bacillus throughout the organism as to excite the production of this immunizing agent by natural processes, claiming that in no other way can the antitoxin of tuberculosis be secured in sufficient concentration for use in therapeutics.

That by simply heating tuberculin with peroxid of hydrogen a product should be obtained identical with that resulting from very complex metabolic processes in the animal organism is not impossible but seems almost too simple to be true. As a rule albuminous principles treated chemically in the test-tube do not correspond in action to closely related principles isolated directly from the animal body, and it seems probable that if the antitoxin of tuberculosis is to be manufactured it must be done in the animal body rather than in the thermostat.

As for the premises on which Hirschfelder proceeds, it is of little moment to point out that simple access of air is almost certainly not the essential curative agent in successful operations for tuberculous peritonitis. It may be suggested also that the prolonged heating of tuberculin with peroxid of hydrogen may very well produce, in the toxin, other changes than oxidation.

An examination of the results obtained by the treatment shows much information to be desired. A New York physician would send a patient falling in Hirschfelder's first class to California with a good prognosis as to recovery within a year. Many such results are seen at Saranac. The exact conditions under which these patients were treated are therefore essential data in judging of the efficacy of the special treatment. Further, if oxytuberculin is the antitoxin of tuberculosis, we should like to know the efficacy of this agent in limiting the course of tuberculosis in inoculated guinea-pigs. The lack of evidence from experimental pathology will especially strike those best fitted to judge of the probable value of the remedy, *viz.*, experimental pathologists.

But whatever fears may arise as to the ultimate fate of the new treatment, it cannot be classed with the host of ephemeral specifics constantly being thrust upon the profession. Hirschfelder's work bears the stamp of careful and competent study on a distinctly scientific basis, and whether ultimately successful or not, the investigator's claims seem to deserve the consideration of the medical public.

ECHOES AND NEWS.

Pauper Centenarian Dead.—The Coroners' Office was recently notified of the death from consumption of a female inmate of the Almshouse on Blackwell's Island. The woman was 105 years old.

French Congress of Surgery, 1897.—The eleventh session of the French Congress of Surgery will commence in Paris on October 18, 1897. The following subjects will be discussed: (1) "Contusions of the Abdomen;" (2) "The Indications for Operation and the Treatment of Cancer of the Rectum."

Death of Dr. William C. Wey.—Dr. William C. Wey died of apoplexy on June 30th at his home in Elmira, N. Y. He was born in Catskill, N. Y., in 1829, and graduated at the Albany Medical College in 1849. He was President of the State Medical Society in 1871, and for many years was Health Officer of Elmira.

Nail Fired into His Tongue.—A young man of Saugerties, N. Y., recently made use of a wire nail to dislodge a cartridge from a revolver. While he was thus engaged, the revolver was discharged and he received the full charge in his face. Later the nail, which measured three and one quarter inches, was found embedded diagonally across the tongue.

Special Instruction for Feeble-Minded Children.—A report on the district schools of London brings out the fact that about one per cent. of children of school age are so far below the normal in physical and mental power as to require special training. A separate class-room is to be alloted to these children, where they will receive a modified kindergarten training and suitable physical exercise.

Pilgrims and Quarantine.—The *Lancet* says that at Mecca "pilgrim diarrhea" has become an annual factor which has never yet been dealt with, and there is even a suspicion that for the last few years cholera has been endemic there. As Turkey has, up to the present time, done nothing in the matter, it is suggested that Europe insist that these pilgrimages be conducted on cleanly and decent lines.

To Sue for His Medical Diploma.—It is said that a colored student of the Rush Medical College, Chicago, has begun suit in the Circuit Court for a writ of mandamus compelling the college authorities to issue to him a diploma. The student claims that the diploma was withheld on the charge that he had copied answers from other students in the course of his final examination. This he denies, and demands proof of the charges or the granting of a diploma.

Cremation of Garbage.—The village of New Brighton, S. I., has been greatly exercised over the question of the disposal of garbage. A crematory was built in which the garbage was burned, but some of the residents in its immediate vicinity protested against the bad odors. An injunction was granted prohibiting the use of the crematory, but, upon it being shown that the bad odors were due to faulty working of the plant, the latter was remedied and the injunction removed.

Blindness Caused by Drinking Essence of Peppermint.—The news comes from Washington, D. C., that a Wisconsin Indian Agent has reported two peculiar cases of blindness occurring on the Vermillion Lake Reservation. Two Indians drank essence of peppermint as a substitute for whisky, one taking almost ten ounces clear, and in each case blindness followed within a few hours. A case was recently reported in Philadelphia in which blindness occurred after drinking a quantity of Jamaica ginger.

New York State Board of Health.—A meeting of the State Board of Health was held in New York City on June 29th. A communication from Attorney-General Hancock advised the Board that it has the right to take such steps as it sees fit, independent of any opposition that may be offered, to abate nuisances which have been complained of. The report of the sanitary condition of the State announces that a decrease of 1,000 deaths over the cor-

responding period for the previous month has been reported.

Tornado Neurosis.—The people of St. Louis are suffering from a new disease called tornado neurosis. According to a physician in that city, women and little children die from time to time as a result of the nervous shock caused by the tornado of a year ago, and the repeated shocks caused by the alarm which they experience whenever there is a thunder-shower. The latter is largely due to sensational newspapers which publish greatly exaggerated bulletins whenever a storm is predicted by the Weather Bureau.

Haffkine's Plague Prophylactic.—The results of Professor Haffkine's inoculations against the bubonic plague in India afford a striking instance of the value of antitoxic methods of prophylaxis. It is indeed remarkable that the introduction into the body of the mixture which results from the growth of the plague bacillus in a mass chemically so complicated as a mixture of native "ghee" and bouillon should cause the inoculated to suffer about twenty times less than the non-inoculated, living under the same conditions and exposed to the same infection.

Not Necessary to Die.—Dr. C. A. Stephens, of the Boston University Medical School, is reported as saying he is convinced that the progress of brain science will enable mankind to successfully overcome decay and its climax—death. He further states his belief that death at seventy years or thereabouts is due to the fact that generation after generation is born into the world expecting to die at that time and therefore die. He expresses the opinion that if children were brought up to believe they would live forever, the life limit would gradually be extended in the course of several generations.

The Wearing of Clothing Disastrous to the Savage.—A writer in *Harper's Magazine* claims that civilization will rapidly exterminate the savage races. The first thing done for the black heathen is to make him wear uncomfortable clothing, in which he sweats and breeds poisonous microbes with horrible fluency. He never changes his clothing, and when he gets wet he knows no better than to dry it by sitting close to a fire. In this way he contracts fever, which undermines an otherwise robust constitution. The so-called Christian natives disappear rapidly after being clothed in the armor of civilization.

The Lancet and the Jubilee.—*The Lancet*, which was founded fourteen years before Victoria ascended the throne, gives in the issue of June 19th a brief *résumé* of the advances made in medicine during her reign. In the chapter on surgery credit is given America for the discovery of ether. Knight of New Haven, is mentioned as having in 1848 employed digital compression in cases of aneurism. Weir Mitchell is referred to as having been the first to perform suture of nerves. Halsted's operation for the cure of inguinal hernia is mentioned, and credit given Marion Sims for removing a gall-stone from the cystic duct in 1878.

Horseless Carriages for Doctors.—Dr. Charles C. Booth of Youngstown, Ohio, seems to deserve the distinction of being the first physician in this country to adopt a horseless carriage for use in his practice. The doctor is inventive, and has devised what he calls a motor cab, which he has used for several months. The cab is capable of making a speed of ten miles an hour on a level, and will climb a grade of from ten to fifteen feet to the hundred at the rate of five miles an hour. It seems that in sections of the country where the roads are uniformly good physicians will soon be able to do away with the expense of keeping horses, and will rely upon bicycles or horseless carriages.

Pills Under the Hammer.—In a recent article with this title in the *Pharmaceutical Era*, Dr. Windolph says: "'Leaden pills' have their place in military warfare; but the physician in battling with disease should select his ammunition for other qualities. I make no comment on the solubility of a pill, whether coated or uncoated, which is of sufficient hardness to penetrate a pine board. I feel justified, however, as a pharmacist, in contending that the interests of the physician, the patient, and druggist as well, are better served by pills extemporaneously prepared, or, in any event, by the use of such manufactured pills as are known to be in a permanently soluble condition."

Physiologic Testing of Drugs.—The physiologic activity of medicinal agents is just now receiving much attention from physicians, and methods have been devised whereby it can be directly tested, entirely apart from chemical analysis. In the near future pharmacists may be required to guarantee not only that the drugs they sell are pure, but that they possess the required ability to act on the systems of those to whom they may be administered. *The Pharmaceutical Era* says: "It is well known among investigators that there are certain classes of remedies which cannot be standardized by any chemical means. Some of these remedies are the most important in the whole Pharmacopeia. The group of heart tonics is perhaps the most notable, including as it does a very large number of drugs that are constantly prescribed by the physician. Of this group of heart tonics, undoubtedly digitalis is the most important."

Health and Population.—Some official figures recently appeared in London which gave great surprise to social economists. They were filed with the registrar-general, and showed that the death-rate was relatively lower in the larger cities of England than in the small ones. The rate in London was 15.5 per 1000 inhabitants; in Liverpool, 19.9; in Hull, 15.8, and in Sheffield, 19.1; but in the town of Plymouth it was 23.5; in Salford, a suburb of Manchester, 25.9; in Bolton, 25.8, and in Burnley, 25.1. Though the sanitation of large cities is, in the main, better than that in the smaller towns, the transient population is larger in the former and, moreover, the big cities usually maintain a larger number of public, penal, and charitable institutions, hospitals, asylums, and prisons, which add materially to the death-rate. In the city of New York, for instance, as the last figures of the Board of Health show, nearly 10 per cent. if, indeed, not quite

10 per cent., of the interments are pauper burials made at the public expense and from public institutions usually.

New Appointments and Changes in Bellevue's Faculty.—The following new appointments have been made in the Faculty of Bellevue: Dr. Charles L. Dana, Professor of Diseases of the Nervous System; Dr. Henry C. Coe, Clinical Professor of Gynecology; Dr. Henry H. Rusby, Professor of Materia Medica and Pharmacology; Dr. John A. Mandel, Adjunct Professor of Physiological Chemistry; Dr. William H. Park, Lecturer on Bacteriology and Hygiene; Dr. George D. Stewart, Professor of Anatomy; Dr. Austin Flint, Jr., Professor of Obstetrics and Clinical Midwifery; Dr. Herman M. Biggs, Professor of Therapeutics and Clinical Medicine and Adjunct Professor of Principles and Practice of Medicine. Dr. Joseph D. Bryant has given up the Chair of Anatomy and has been appointed Professor of the Practice of Surgery and of Operative and Clinical Surgery. Dr. Lewis A. Sayre has been made Emeritus Professor of Orthopedic and Clinical Surgery. Dr. Reginald H. Sayre has been appointed Lecturer on Orthopedic Surgery. Dr. Carlos F. McDonald has had the department of Medical Jurisprudence assigned to him in addition to the Professorship of Mental Diseases. Dr. D. Hunter McAlpin, Jr., has been promoted to Professor of Gross Pathology and Clinical Registrar.

Disappearance of Plague from Bombay.—According to the *British Medical Journal*, the epidemic of plague which has raged in Bombay for nearly a year is practically over, although a few new cases will probably be reported during the coming twelve months. But 15,000 deaths are recorded in a population of nearly 800,000—a very low mortality compared with that of the 1666 plague in London, which was estimated at forty per cent. of the entire population. The sanitation of Bombay and the active medical measures taken to prevent the spread of the disease have undoubtedly saved thousands of lives. Apparently nothing will shorten the duration of an epidemic, as is shown by the fact that in Hong Kong, in spite of its almost perfect water supply and modern drainage and sanitary and medical supervision, the plague lasted as long as it did in Canton, where there is absolutely no sanitation whatever. But it is evident that sanitation is of the greatest importance in limiting the number of persons attacked during an epidemic, and that improved sanitation is the weapon by which the dread scourge should be fought. The following essential points should be borne in mind in the event of plague becoming epidemic in any civilized community: First, that there is no such thing as a mild outbreak of true bubonic plague. Second, that private interests must stand aside for the time being, and that full powers must be granted to a supreme body to deal with all sanitary measures in the manner which seems best calculated to lessen the number of persons attacked.

The Jubilee Number of the British Medical Journal.—In commemoration of the Queen's Jubilee, the *British Medical Journal* issued June 19th a very large number which is entirely devoted to a detailed record of the progress of the medical sciences during the Victorian period. The review is illustrated by seventy-five cuts, one of which is a portrait of Marion Sims, the only American thus honored. After mentioning as main factors in the advance of medicine, the invention of instruments of precision, the discovery of causes of disease, improvement in the means of preventing disease, simplification of treatment, antitoxins and organic extracts, anesthesia, and antisepsis, an exhaustive review is given of the progress of every department of medicine during the past sixty years. Much prominence is given to the work done by subjects of the Queen, although occasional mention is made of that done by Americans. In the section on obstetrics mention is made of observations in America concerning contracted pelves and difficult labor. In that on gynecology special mention is made of the Johns Hopkins Hospital and of Howard Kelly and his staff; Marion Sims and Bozeman are spoken of in connection with operations for the repair of lacerations of the perineum and for vesico-vaginal fistula; Emmet's operation of trachelorrhaphy is also mentioned; Ephraim McDowell is the only American mentioned in the chapter on abdominal surgery. The Weir-Mitchell treatment of neuroses is referred to. In the article on anesthesia, no mention is made of Morton as the discoverer of ether.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

A LAW FOR THE INSPECTIONS OF BAKERIES—THE SUMMER EXODUS OF PHILADELPHIA MEDICAL MEN—BLOCKLEY NOTES—DR. J. M. DA COSTA—AN OBNOXIOUS PIECE OF LEGISLATION—VITAL STATISTICS FOR THE PAST WEEK.

PHILADELPHIA, July 3, 1897.

ALTHOUGH the butcher must submit the meat he intends selling to a close inspection before he may dispose of it, and the dairyman is compelled to submit his products to official surveillance before they reach the consumer, the baker and the confectioner, until the passage of the present Bake-Shop Law, which officially went into effect a few days ago, have always managed to evade a close inspection of their methods of manufacture by the authorities. But this large class of manufacturers will now be compelled to comply with regulations which have for a long time governed other producers of food-stuffs, and to serve the public with a product whose purity and cleanliness in preparation is approved by the inspectors of the State Factory Department.

The new Bake-Shop Law proves to be a most sweeping—and, if properly enforced, will be a most valuable—act of legislation, and its literal application will result in the reconstruction of hundreds of bakeries throughout the city and the closing up of many more. It includes in its jurisdiction bread bakeries, confectioneries, maccaroni factories, and pretzel and pie bakeries; regulates the hours for employés, and forbids the employment of all but healthy persons; it also provides for the proper ventila-

tion, drainage, and plumbing of all buildings and rooms in which the manufacture of this sort of food is carried on.

No one who has not investigated this matter personally can have any conception of the unsanitary condition of many of the bakeries in the poorer sections of this city, and it was high time that a law was passsd by which these foci of disease and filth may be eliminated. It will be interesting to watch the practical application of this measure, with its ins and outs of political complexities; but it is to be hoped that the enforcement will be thorough, and the results a gain in the sanitary condition of the community.

The summer exodus has begun in earnest, judging from the boarded-up fronts which the offices of many prominent medical men present and from the numberless signs of "Patients are referred to Dr. So-and-So until September 1st" which one sees at every turn. The stay-at-home laity, in some sections of the city, keep their doctor with them the whole year round; but to hunt for your physician, should he happen to live in the center of town, would be, in many instances, a disappointing and hopeless endeavor. Dr. James C. Wilson has gone to Rye Beach, N. H., for the month of July, and intends to pass the remainder of the summer in the Maritime Provinces of Canada. Dr. Edward Willard Watson is at Castine, Me., where he will spend this month and next. Dr. Edward P. Davis is at Marion, Mass., for the rest of the summer. Dr. Henry C. Chapman, Dr. John B. Shober, and Dr. S. Madison Taylor are spending the season, as usual, at Bar Harbor, Me. Dr. Thomas G. Morton has taken a cottage at Cape May, N. J., for the season. Dr. Thomas G. Ashton will spend the summer at Atlantic City, N. J. Among the recent departures for Europe may be mentioned Dr. Arthur V. Meigs, Dr. Charles P. Noble, Dr. John H. Packard, Dr. P. S. Donnellan, and Dr. Horace Y. Evans. Dr. William W. Keen leaves the latter part of July for an extended trip through the Northwest, including Alaska. Dr. William G. Porter will spend August at his country house at Fairfield, Conn.

The daily population at the Philadelphia Hospital (Blockley) for the past year averaged 3494 persons in all the departments of the institution. The insane department showed the greatest gain in patients, having cared for 830 more cases daily in 1896 than were treated ten years ago, an increase of 210 per cent. A curious phase of the Department of Charities and Correction, the administrative body governing Blockley, may be found in the *personnel* of the Out-door Staff of district physicians, which is so composed that the discriminating poor may choose for gratuitous medical attendance at their homes either a regular practitioner or a homeopath, depending upon the patient's individual mark of intelligence. The announcement that twenty-five of these medical makeshifts have been added to the out-door service would appear to indicate their popularity with the lower classes; but it is gratifying to note that this medical tinkering is wholly extramural in character, for all the internes of the hospital are graduates of regular schools of medicine.

At the annual commencement of Harvard University, held on June 30th, the honorary degree of LL.D. was conferred upon Dr. Jacob M. Da Costa. Dr. Da Costa delivered an oration before the alumni association of Harvard during the meeting of that body this week.

The Board of Health is up in arms against a bill awaiting the Governor's consideration, which proposes to dispense with the present law making marriages returnable to the Health Officer. It is inconceivable what legislative stupidity called into existence this bill, which not only aims to destroy the continuity of the valuable records of marriages, births, and deaths kept for the past twenty-seven years by the Bureau of Vital Statistics, but, should it become a law, would obviously prove a decided obstacle in the settlement of certain legal and social questions which might arise in the future; one occasionally requires proof of one's marriage, and the Board of Health's protest will probably result in the continuance to citizens of Philadelphia of this privilege.

The number of deaths in this city during the week ending July 3d was 492, an increase of 64 over those of the preceding week; of the total, 226 occurred in children under five years of age, cholera infantum causing 58 fatalities. The returns of contagious diseases for the week show a total of 205 new cases, a decrease of 64 from last week; 63 were diphtheria, 99 scarlet fever, and 43 enteric fever; there were 25 deaths from diphtheria, 7 from scarlet fever, and 6 from enteric fever.

OUR VIENNA LETTER.

[From our Special Correspondent.]

OFFICIAL REPORT OF THE AUSTRIAN PLAGUE COMMISSION—ETIOLOGY, CLINICAL FEATURES, TREATMENT AND TRANSMISSION OF THE PLAGUE—FEVER IN LEUKEMIA WITH NO OTHER CAUSE BUT THE BLOOD CONDITION—PROFESSOR MONTI ON THE DIFFERENTIAL DIAGNOSIS OF ANGINAS IN CHILDREN.

VIENNA, June 12, 1897.

THE commission sent by the Austrian Government to Bombay to investigate the etiology, pathology, and clinical features of the pest, returned last week. Its official report was read at the session of the Imperial Academy of Sciences of Vienna on May 20th. As the clinical and pathologic material, through government influence, was entirely in their own hands, the members of the commission were, in the words of the report, "in the pleasant position of absolute independence, and their conclusions are the result entirely of their own observations and experience."

As to etiology, they confirm the generally accepted opinion that the bacillus found and described by Yersin and Kitasato is the cause of the disease. These bacilli may be found in large numbers in all lymphatic tissues, and especially in the spleen. While the disease may be conveyed to animals by direct inoculation, the members of the commission observed its spontaneous development only in rats. Mixed infection plays an important *rôle* in the severity and variety of the symptoms noted in the course of the disease. All the ordinary microbes seem to find a favorable culture-medium in the blood of affected

persons. The streptococcus, the diplococcus pneumoniæ, and the staphylococcus were observed with special frequency. Three types of the disease could be distinctly differentiated, the first being a septicemic hemorrhagic form characterized by septic hemorrhagic buboes, and by hemorrhages in the walls of neighboring venous trunks. This form, by far the most common one, presents a specifically characteristic swelling of the spleen, and specific changes in all the lymphatic tissues, the lymph glands, the intestinal follicles, and the follicles of the mouth, throat, and tonsils. The second form is a septic pyemia, with metastases to the internal organs, especially the lungs, liver, and kidneys. The third form is a primary pest-pneumonia—a specific confluent, lobular pneumonia.

The favorite points of entrance for the infecting material are, in the order of importance; (1) The skin, with consequent lymphatic involvement. This is by far the most frequent mode of entrance. (2) The lungs, occurring in a very much smaller number of cases; and, (3) the tonsils, a very rare form, but of interest as exemplifying the importance of that ever-open road to infection. In these cases the glands beneath the jaws showed the characteristic buboes. No case of infection through the intestinal tract was noted.

Besides the symptoms usually noted, both serum and nuclear albumin were always present in the urine, though in small amounts. The chlorids were always considerably diminished. No blood was found in the urine of any of the patients, and the ophthalmoscope never revealed the presence even in frankly hemorrhagic forms of the disease of hemorrhages into the retina. Slight leucocytosis was noted.

The diagnosis was difficult only when the characteristic buboes were absent, as in the pneumonic form of the disease. The presence of the bacilli in the sputum was then diagnostic. As to treatment, none of the pharmaceutical remedies used seemed to have any effect on the course of the disease. The investigators did not observe the success which has been reported from the use of Yersin's antitoxic serum, though they saw it employed in a number of instances. As to Haffkin's treatment with sterilized cultures of the bacilli, the official report is not so definitely unfavorable. The results of certain experiments and further observations are awaited. In private conversation, however, some members of the commission have expressed themselves as absolutely without confidence of any good resulting from this method of treatment.

As to the danger of the transmission of the pest to other countries, the probability of such an event does not seem at all likely. The plague is not easily carried in fomites, and very ordinary precautions will suffice to prevent its transmission in this way. Under proper medical supervision, which need not be of extraordinary character, the danger of its being transmitted to other countries by affected persons is extremely small. The presence of large numbers of rats on shipboard at all times, and their now thoroughly known liability to the disease makes the coming of ships from parts where the disease is prevalent always a reason for strenuous precautions.

The report of a case of leukemia from Professor Schrötter's clinic here has just been published in which for months before death there had been a daily evening rise of temperature of 2.5° to 3° C. The autopsy made with extreme care by Professor Weichselbaum himself showed no traces of a tuberculous or septic process in the system. Quinin never had any effect on the fever. The other antipyretics seemed only to cause abnormally lowered temperatures when the drop came, but did not lessen the rise. The fever itself seemed to have no effect on the leucocytes.

Professor Schrötter, in a clinic a few days ago, called attention to the fact that besides leukemia, other of the serious blood changes—chlorosis and the severer forms of anemia—were accompanied under certain circumstances by this tendency to temperature disturbances. The explanation would seem to be that a ferment intoxication occurs which is due to the absorption of certain elements not present in the condition of normal blood equilibrium, but liberated when that equilibrium is disturbed—elements which are of great importance in certain conservative processes, as clotting, etc.

Professor Monti, at the Polyclinic, has just concluded a series of lessons on anginas in children. As was to be expected from so well known a clinical teacher, the points given were very practical and were strikingly presented. As to differential diagnosis, of course, the important point is the bacteriologic examination in all cases where there is a membrane present. This requires practically twenty-four hours of time, and meantime treatment must be begun in private practice, for if the case is one of diphtheria valuable time may be lost by delay. The external appearances then have not lost their importance and will usually serve to indicate whether diphtheritic treatment and isolation should be instituted at once. Punctiform patches of membrane on the tonsils usually indicate only infection by staphylococci—a follicular tonsillitis. When the membrane occurs in larger patches, but is limited only to the tonsils, especially if a piece of the membrane removed from the throat is not tough and consistent but crumbles readily between the fingers and does not show a fibrinous network under the microscope, it is streptococcic in origin. The true diphtheria membrane is not so apt to be localized to the tonsils, and owing to it fibrinous character does not crumble easily.

Any membranous affection in the throat of a child calls for isolation, for even in the mild staphylococcic form the microbes have an acquired virulence that makes them contagious for children living under the same conditions, and the lesions they produce make easy points of entrance for diphtheria bacilli.

As to treatment, besides the antitoxin local measures must not be neglected. Gargling is usually out of the question, for even with older children it cannot be practised with sufficient frequency to be of any practical therapeutic value. Sprays are so evanescent in effect that their repetition often enough to be of use would seriously worry the patient, so that the indication seems to be always for the use of powders. These remain long enough in contact with diseased parts to have the desired antiseptic

effect. As all the throat bacilli grow better in an alkalin medium, only acids should be used in the treatment. Boric acid and tannic acid, especially the latter, are the favorites in Monti's children's wards at the Polyclinic. Iodol or iodoform in powder are used in the severer cases. Second attacks of genuine diphtheria Monti considers to be much rarer than is usually thought. Diphtheria leaves a throat in a state of lowered vitality, and staphylococci and streptococci readily find a lodgment in it, but true diphtheria recurs almost as rarely as other children's diseases.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

ROENTGEN RAYS WITHOUT GERMICIDAL POWER—THEIR USE IN THE DIAGNOSIS OF DISEASES AFFECTING THE DEVELOPMENT OF THE SKELETON—THE RESULTS OF CALOT'S FORCIBLE REDUCTION OF THE DEFORMITY IN POTT'S DISEASE—IS HYDROCEPHALUS HEREDITARY?—THE TREATMENT OF ACUTE ECZEMA BY PICRIC ACID—CONGENITAL ORIGIN OF MOVABLE KIDNEY—MUSCULAR RHEUMATISM FOLLOWING GONORRHEA—THE EFFECT OF ANTI-SYPHILITIC TREATMENT UPON TUBERCULOSIS.

AT the session of the Academy of Sciences, held May 3, 1897, SABRAZES and RIVIERE stated that *the Roentgen rays have absolutely no effect upon the bacillus prodigiosus*, and the cultures of this bacillus, although exposed to the action of these rays, showed absolutely no change in their chromogenic properties, morphologic characteristics, or vegetability. In frogs exposed to the influence of the rays, the action of the leucocytes was not effected, either as regards their number or phagocytic powers. In some cases there seems to be an increased flow of lymph. Furthermore, a frog's heart is not modified in its rhythm until after an hour's exposure to the rays.

At the session of May 17th, SPRINGER and SERBANESCO demonstrated the *advantage of the use of Roentgen rays in the study of different troubles affecting the growth of the skeleton*. A most remarkable fact was furnished by myxedema. In this affection the radiograph showed a persistence of certain infantile conditions, even at the age of thirty-four years. In hereditary syphilis the arrest of development appeared to be due to a premature ossification with persistence of the cartilage. In alcoholic children the cartilage is thin, irregular, and prematurely ossified. In tuberculosis, either hereditary or acquired, the cartilage persists and its ossification is delayed. In short, a number of diseases produce alterations in the epiphysial cartilage and in its method of ossification. In such affections the radiograph gives a new physical sign easily appreciable and most useful for diagnosis. Investigation along this line will also serve as a guide to treatment, for if the cartilaginous zone is opaque all treatment having for its object increase in the growth is useless, as this has been definitely arrested.

At the session of May 12, 1897, BRUN reported to the Society of Surgery that he had performed *redressement brusque upon two patients suffering from Pott's disease with deformity*. In one case the lesion was three and one-half months old and disappeared under pressure, apparently without the production of such a large anterior cavity as is brought about by this operation upon the cadaver. In the other case the projection had been noticed for five months. The immediate result of treatment was satisfactory.

MICHAUX reported a satisfactory operation of this character upon a child aged nine years who had had a spinal deformity for three years.

BROCA reported three cases in which he had tried this operation; in one case all his strength was insufficient completely to reduce the deformity, which had existed a long time. In the other two cases, one of two-years' and one of about three-months' duration, the deformity was corrected without trouble. No unpleasant symptoms followed in any of these cases.

At the session of May 26th, MENARD made a plea for the conservative treatment of hip-joint disease in children because of the spontaneous cure which so often follows osseous tuberculosis in children. The fact that conservative treatment requires so much time is less of an argument with children than with adults. The majority of cases of coxalgia should be treated at the onset by immobilization, and not by continuous extension. The affected limb should be put in a position of medium abduction in order to avoid inward rotation, which is the principal danger of a vicious fixation in coxalgia.

KIRMISSON was opposed to all forcible correction of deformity in tuberculous troubles whether of the spine or hip-joint, or situated elsewhere.

At the Medical Society of the Hospitals, May 14, 1897, MARIE presented a man, aged thirty-nine, who seemed to be suffering from *hereditary hydrocephalus*. With him the lesion was congenital. His intellectual gifts were small except in the mechanical arts. Two children showed the same cranial condition as their father. This would seem to indicate that hydrocephalus is of hereditary origin.

CHASLIN was doubtful if the condition of the head, either in father or children, was really hydrocephalic.

At the session of May 21th, GAUCHER mentioned the good results which he has had in *the treatment of acute eczema by picric acid*. It is applicable only to the vesicular and weeping variety. As in cases of burns, he employs a one-per-cent. watery solution, saturating the compresses with it, and leaving them in place two days. At the end of this time inflammatory reaction is already subsiding, through the same application is repeated every two days as long as is necessary. The picric acid has a calming effect and rapidly relieves the itching. Gaucher believes that this treatment will be found applicable to other acute superficial inflammations of the skin, for example, in cases of pemphigus.

COMBY has six times observed a movable kidney n children. All of the cases were in females, four of the children being from ten to sixteen years of age. They had suffered for years from dyspepsia and pain in the right side. The other cases were found at autopsy in syphilitic infants, aged one and three months respectively. In both of the latter instances the trouble was bilateral and con-

genital. Comby suggests the hypothesis that all cases of floating kidney are congenital in their origin, or at least that an unusually long pedicle predisposes the kidney to be displaced by influences later in life, such as tight-lacing, and frequent pregnancy.

JACQUET mentioned a case of *muscular rheumatism* occurring in a man aged nineteen, *affecting the muscles of the loin, abdomen, and pharynx, it being secondary to an acute attack of gonorrhea.* The pain in the throat and upon swallowing preceded by at least forty-eight hours any evidence of inflammation in the mucous membrane, so that the inflammation in the latter undoubtedly seemed to be secondary to the affection in the neighboring muscles.

At the session of the Society of Dermatology and Syphilography, May 20th, FOURNIER presented a patient, aged forty-eight, who two months previously had had upon his hands and arms ulcers and granulations having *all the appearances of tuberculosis.* He denied syphilitic infection, and there was no reason to doubt his word. A diagnosis of tuberculosis was further justified by the fact that the patient was a chronic tuberculous subject. However, an injection of calomel was given him, and a stomatitis quickly produced, and there was a decided improvement in the ulceration. Second and third injections were made, and in a short time there was complete recovery.

AUGAGNEUR had seen tuberculous ulcerations in the person of a boy, aged eighteen, cured once by operation, but recurring after twelve years they disappeared after some weeks under treatment with iodid of potassium. A cure also followed the use of this drug in a patient who had an ulcer upon the left leg thought to be tuberculous.

JACQUET and SABOURAUD recalled similar instances in which undoubted tuberculous lesions disappeared under mercurial treatment.

The moral which FOURNIER drew from these facts was that the reaction which follows antisyphilitic treatment does not infallibly determine the diagnosis.

Vienna.

A CASE OF DIABETES MELLITUS THOUGHT TO BE NEPHRITIC IN CHARACTER—A SIGN OF TRICUSPID INSUFFICIENCY—HEMORRHAGE FROM THE FEMALE BLADDER, ITS CAUSES AND TREATMENT—THE VALUE OF CARBONIC-ACID BATHS—THE APPLICATION OF THIERSCH GRAFTS TO THE SURFACE OF A CAVITY.

AT the session of the Medical Club, held May 5th, KOLISCH read a paper upon *diabetes mellitus*, referring to the fact that there are cases which are with difficulty classified either as "light" or "severe." As an illustration, he mentioned that a woman, aged twenty-five, who was troubled with thirst and frequency of micturition, came to him for treatment. The urine contained a great quantity of sugar. Thirst and polyuria diminished under a rather strict diet, and emaciation ceased. The specific gravity of the urine was about 1040 and the daily quantity about 1200 cubic centimeters (forty ounces). It was found impossible, even under a strict diet, to reduce the quantity of sugar below five per cent. Even when hydrocarbons were removed from the diet the sugar still made its appearance, but still without emaciation. Under the circumstances, one had no right to speak of this case as one of "severe" diabetes. By testing the urine hourly after hydrocarbons had been ingested, it was found that it contained sugar only for a few hours after a meal, and, similarly, when albumen alone was given, the amount of sugar was greatest four or five hours after a meal.

Kolisch described this case as one of tachyglycosuria and thought that the lesion might be in the kidney. As a matter of fact, the kidney secretes sugar whenever the blood contains even a fraction over the normal amount. In this case investigation of the blood showed that it contained no increase of sugar, which is characteristic in diabetes of kidney origin. This would also explain the absence of polyuria. The writer did not attempt to say whether this was a disease by itself or simply an early stage of ordinary diabetes.

TELEKY thought that a patient whose urine contained sugar, but who presented no other symptoms, should not be described as a diabetic. HERZ did not believe that in the case reported the lesion was confined to the kidneys, as the liver also must have been affected. SINGER thought the proof that the blood did not contain an excess of sugar was insufficient, as, if present, it might have been variable from time to time.

KOLISCH said, in reply, that although not many examinations of the blood had been made, for the reason that the patient could not bear it, yet the fact that examination was made and yielded a negative result at a time when the urine contained sugar, was good proof that there was no hyperglycemia. He thought one is justified in calling such a case diabetes, inasmuch as the presence in the urine of sugar is the one invariable symptom of the disease, and we know too little about diabetes to make a diagnosis when this symptom fails.

At the session of May 12th, BRAUN discussed *the signs of tricuspid insufficiency.* This may be either relative, produced by excessive dilatation of the right ventricle, or functional, as a result of imperfect action of the papillary muscle. He mentioned a case of tricuspid insufficiency in which, a short time before death, systolic pulsation appeared in the veins of the neck, while in the cardiac area pulsation could be seen in three places—the usual pulsation over the apex of the heart in the fifth left interspace, a double pulsation in the third left interspace (the first being lower than the second), and a third pulsation in the second interspace to the left of the sternum and close to it. This pulsation began as a presystolic one and grew stronger during the systole, which it outlasted. Braun had proved by autopsy that this pulsation in the second left interspace could emanate only from the right auricle or its appendage, and he therefore regards its occurrence as a reliable symptom of tricuspid insufficiency only to be seen in connection with a considerable amount of dilatation.

KOLISCHER spoke of *hemorrhage from the female bladder.* The use of the endoscope and cystoscope has shown that many of the theories in regard to this subject are false. Hemorrhage occurring before the stream of urine has its origin in the urethra. The most frequent causes of it are polyps, which are really angiomata, and

gonorrhea; in the latter trouble therapeutic measures, such as the introdution of too hard medicated pencils may bring about hemorrhage, with severe results. It was previously supposed that the passage of cylindrical blood-clots was absolute evidence of hemorrhage either from the ureter or kidney. The cystoscope has shown that such is not the case.

Hemorrhage from the bladder may be due to new growths, inflammation, injury, as by instruments, or to alteration in the blood-vessels. New growths are a far less frequent cause of hemorrhage than is usually supposed. Here, too, the commonest cause is gonorrhea. Malignant tumors in the vicinity may produce degeneration of the blood-vessels of the bladder, with resulting hemorrhage. This takes place, for instance, in carcinoma of the uterus. Chronic inflammatory processes produce excrescences in the vicinity of the urethral orifice, and if these are torn off during urination or as result of examination, hemorrhage follows. The cystoscope has shown also that the bladder, even in women who have not borne children, may contain varices, and these are liable to burst and produce troublesome hemorrhage.

The treatment in all of these cases is the introduction of cold water, preceded if necessary by a curettage. The introduction of styptic substances, such as chlorid of iron, is dangerous. Tamponing the bladder is not to be advised. The most radical measure is suprapubic cystotomy. In using the cystoscope to establish the diagnosis of tumor of the kidney, at the time of examination perhaps no blood may be seen to issue from the mouth of the ureter, although the urine invariably contains blood. Very often in such a case pressure in the lumbar region will cause blood to flow from the ureter and thus establish a diagnosis.

At the session of May 19th, RUDINGER discussed the *value of baths containing carbonic dioxid*, which were first employed at Nauheim, where there are natural springs containing this gas. The attempt to produce such baths by a mixture of carbonates and hydrochloric acid has proved unsatisfactory. If the compressed gas is simply allowed to flow through the water of the bath, it almost all escapes, but an apparatus has been devised by Lippert which mixes the water and gas before the water is allowed to flow into the tub, and by this apparatus the water can be charged with gas up to fifty per cent. of its value. Rudinger has devised an improvement by which the water is made to take up one and one-fifth volumes of the gas in a short space of time.

REITHOFER has employed these baths with excellent results in neuresthenia, myalgia, neuralgia, and for the lancinating pains of tabes dorsalis.

HERZ, who studied the treatment at Nauheim, was in many respects disappointed. One woman, whose aortic insufficiency was said to have been much benefited, was found by him never to have had an aortic lesion. He also saw several cases in which the baths and accompanying gymnastic exercises were followed by tachycardia and an increase in the area of cardiac dulness. At Nauheim the patient's head remains in an atmosphere charged with carbonic bioxid, while those who prescribe the artificial baths are careful to see that the patient breathes pure air during the bath.

At the session of the Imperial-Royal Society of Physicians, held May 14th, GERSUNY mentioned two instances in which he *attempted to apply Thiersch grafts to the surface of a cavity*. In the first case, diphtheria had produced an almost complete cicatricial stenosis of the larynx in a child one year and nine months of age, and breathing was only possible through a cannula in the trachea. Gersuny divided the larynx, excised the cicatricial mass, and covered the circular denuded area, which was left with a graft taken from the thigh, and in order to keep it in place the cavity was tamponed and the skin sewed together over it. In eight days the tampon was removed and the flap was nicely united. The cannula was kept in position for some time, and the larynx was dilated with bougies and tubes, as there was some tendency toward contraction. The cannula was at last dispensed with and the child breathed normally.

In another case, in which over an inch of the urethra was obliterated, the urine being passed through a fistula, the scar was excised and a graft placed in position much as in the other case. Instead of a tampon, however, a catheter was introduced and left in position for some days. The result was perfect, and contraction is not to be feared, as the new canal is somewhat larger than the old.

At the session of May 24th, WALDSTEIN showed a case of *cleft pelvis with epispadias and ectopia vesicæ* in a woman aged thirty-three, the peculiar feature being that the bladder was completely closed. This combination has been reported only three times, namely, in boys aged respectively fifteen months, eighteen months, and six years. In the case presented, the labia majora and minora were separated anteriorly about a finger's breadth, the clitoris was divided, and immediately under it there was an opening about one-half an inch in length, through which a sound passed in one direction into the bladder and in the other through a normally placed meatus urinarius into the vestibule. The patient was seven-months' pregnant. Waldstein believed that a normal birth for both mother and child is possible.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, Held May 19, 1897.

The President, DR. CHARLES L. DANA, in the Chair.

DR. JOHN F. ERDMANN presented a patient from whom he had removed the left half of the inferior maxilla for carcinoma. The man was a longshoreman, fifty-five years of age, whose family history was good. He was first seen February 15, 1897, at which time there was a hard lump on the inferior maxilla and also anchylosis of the jaw. The growth was hard, ulcerated, discharging freely, and involved the tonsil, pillar of the left fauces, sulcus of the mouth, and the left side of the tongue. There also was some enlargement of the cervical glands

on the same side. On February 22nd the speaker removed the glands, and it was found necessary to excise four and a half inches of the internal jugular vein and also half an inch of the pneumogastric nerve. The external carotid, external linguinal, superior thyroid, and facial arteries were ligated. The wound healed by first intention. There was a slight brassiness of the voice, which, however, disappeared at the end of ten days. Three weeks after the first operation, the left half of the inferior maxilla. together with the tonsil, pillar of the fauces, half an inch (in depth) of the wall of the pharynx, mucous membrane on the posterior half of the left cheek, and the side of the tongue were removed through Kocher's incision. The patient made a good recovery, and there is no evidence of paralysis of the vocal cords as a result of excising the pneumogastric nerve, nor has it had any effect upon the pulse-rate.

DISCUSSION.

DR. E. S. PECK thought it remarkable that a man as old as the patient should have survived such a number of ligations.

DR. JOSEPH COLLINS said that exsection of the pneumogastric must naturally strike those of us who studied physiology ten years or more ago as being very remarkable. Then it was taught, and is now by many, that such injury must necessarily be attended with decided perversion in rhythm and rate of the pulse and changes in blood pressure. Jendrassik has recently stated that the pneumogastric is not a cerebrospinal nerve, but that its function is purely vegetative. Having this in mind, he would look for some trophic change in Dr. Erdmann's patient, and asked the latter if careful examination had been made for any change in the pupils and circulation on that side. Although not willing to go as far as this, the speaker thought it more than likely that all the fibers furnished by the so-called vagus nucleus, the vago-glossopharyngeal nucleus, are vegetative.

The PRESIDENT said that symptoms often occur in surgical practice which might be confounded with neuritis of the pneumogastric. He had seen several cases in which the latter followed grippe and in which there was paralysis of one of the vocal cords, but no change in the heart's action. The speaker did not agree with Jendrassik that the pneumogastric is a purely sensory nerve, for there are motor as well as sensory fibers in its trunk.

DR. ERDMANN, in closing, said that no study had been made of the trophic changes, because the patient disappeared and was lost sight of for a time. He added that Roswell Park has mentioned a number of cases in which the pneumogastric has been divided, on both sides in some instances, without serious results.

DR. S. BARUCH then read a paper, entitled

THE HEALTH RESORTS OF EUROPE.

(See page 33.)

DISCUSSION.

DR. ROBERT MILBANK regretted that he had not heard all of the paper, which was most interesting, and thought we should have in this country sanitaria similar to those in Europe, as described by the author. Results obtained here would then be as good as those secured abroad.

DR. WILLIAM STEVENS said that rest, diet, and hydrotherapy are beneficial in many cases and wonderfully effective in lung diseases, and hoped that the author could tell us of similar places in this country where patients might be sent.

DR. H. L. TAYLOR thought the observations made by the author while abroad should have a great deal of influence in the conduct of sanitaria in this country. He referred to several in this State, and said that the average large sanitarium is conducted as a commercial enterprise, unscientifically, and prevaded by an atmosphere of sentimentality which is absolutely detrimental to many of the patients.

DR. J. H. FRUITNIGHT was especially impressed by the fact that open air is largely relied upon in sanitaria devoted to phthisical patients. He was heartily in favor of such treatment.

DR. ROBERT NEWMAN said that such a beautiful narrative as the author's paper could hardly be discussed. He regretted that there are in this country no proper sanitaria for the treatment of consumptives, and said that in some it is remarkable to see how the simplest sanitary rules are neglected.

DR. R. A. MURRAY thought that failure with the use of natural means of cure, *i.e.*, air, water, and rest, is due to lack of facilities and personal supervision on the part of the physician. That a great deal of good is to be obtained by these agents is evident from the results secured in Germany, where the treatment is scientifically carried out under the direction of competent physicians.

DR. J. BLAKE WHITE expressed the opinion that too little attention is paid to the selection of a proper resort. A patient suffering from lung disease is sent to a certain place, simply because there is a sanitarium there and without considering whether or not it is suitable for the particular case. Many phthisical patients cannot stand the cold winters of the Adirondacks, yet it is common practice to send them there.

DR. PECK considered the paper very instructive, inasmuch as it called attention to many health resorts in Europe the existence of which is not generally known. He is heartily in favor of institutions where treatment can be carried out under medical supervision and amid pleasant surroundings, and is glad to know that in Germany especial attention is paid to old chronic cases of rheumatism, syphilis, etc. American physicians, the younger men particularly, are apt to be impatient and will not wait for the beneficial results which follow this mode of treatment.

DR. S. H. DESSAU thought there could be but one opinion in regard to the value of the paper, and said that thanks are due the author for bringing home to us such a detailed report of his observations abroad.

DR. BARUCH, in closing, said his idea in presenting the paper was to emphasize the importance of methodical and systematic treatment of chronic disease—a point which medical men are apt to neglect—and hoped it

would prove an incentive to some members of the profession to establish sanitaria in this country where such treatment could be carried out.

DR. JOHN F. ERDMANN presented a specimen of jejunum removed from a man who was shot a few days before. The bullet entered at a point within half an inch of the raphe between the two buttocks and about two inches from the coccyx, passed through the great sacrosciatic notch, traveled along the posterior wall of the pelvis postperitoneally, punctured the peritoneum at the brim of the pelvis just outside of the ureter and iliac vessels, and was found lying beneath the superficial fascia at a point half an inch above the umbilicus and an inch and a half to the right of it. Celiotomy was done and twenty-five inches of intestine in which there were fifteen perforations were removed, and the gut united by a Murphy button. A Meckels diverticulum about an inch in length was found in the portion of intestine removed. The man was in a stooping position, crouching behind a wagon, when he was shot, and this accounts for the wound of entry. When first seen he had a temperature of 106.8° F. and was profoundly septic. During the operation five pints of salin solution were injected in the right median basillic vein. A tampon was left in the abdomen near the Murphy button, and another at the brim of the pelvis. Very free drainage took place, and the dressings had a strong odor of urine. The man died of acute septicemia on the third day. At the autopsy no evidence of injury to the ureter was found.

DR. ERDMANN also showed an inferior maxilla removed from a woman forty-three years of age, whose family history was negative. Some time ago the woman had a molar tooth on the right side extracted and the socket never healed. She then had a wisdom tooth extracted, after which a tumor began to develop. At first there was no pain accompanying the growth, but later she suffered pain at night and occasionally during the day. Examination showed a hard humor about the size of an egg, which extended under the maxilla and proved to be an osteosarcoma. The wound healed by primary intention and hardly any scar remained. There was but little deformity as a result of the operation.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, June 1, 1897.

The President, B. SACHS, M.D., in the Chair.

A CASE OF INTRASPINAL TUMOR OF THE CERVICAL REGION, MISTAKEN FOR HYPERTROPHIC CERVICAL PACHYMENINGITIS.

DR. JOSEPH COLLINS read a paper with this title. (See page 48.)

DR. F. PETERSON asked if there were any other sympathetic symptoms besides the diarrhea.

DR. COLLINS said that he had not seen the patient until a few hours before death, and at that time such sympathetic symptoms as were present were looked upon as ante-mortem ones.

DR. GEORGE W. JACOBY did not think there was a sufficient basis for a diagnosis of hypertrophic cervical pachymeningitis unless there were present the symptoms considered characteristic of that disease. The case just reported presented a pure symptomatology of a growth.

DR. L. STIEGLITZ said that in the differential diagnosis of a tumor of the cord and pachymeningitis cervicalis, the asymmetrical character of the symptoms should be taken into account—the pain and paralysis existing in one arm only for some time. He could not agree with Dr. Collins that symptoms of tumor of the spinal cord are almost entirely root symptoms, for the exaggerated knee-jerk is an early symptom.

THE PRESIDENT said with regard to the symptomatology that the root symptoms are generally the earliest ones, but other symptoms, such as the exaggeration of the reflexes, will appear relatively early if the tumor is sufficiently large to produce pressure upon the lateral columns. The curious thing about tumors of the spinal cord is that the unilateral character of the symptoms disappears at a very early period, and does not necessarily denote any actual invasion of the spinal cord substance; they are due simply to the effect of pressure. He had been interested in the sympathetic symptoms. It had been quite generally supposed at one time that the secretion of the kidneys is very much influenced by disease in the cervical portion of the cord, but experiments made years ago by several investigators, including himself, had cast some doubt on the correctness of this view, Eckhardt has found that interference with the ureters in the earlier experiments was apparently responsible for the inhibition of the renal secretion, and that the cord had nothing to do with it. The speaker said that pachymeningitis hypertrophica cervicalis has always been more or less of an enigma to him; he has seen very few cases corresponding to the description given by Charcot, and was in some doubt as to whether it represents a disease *sui generis*.

DR. MARY PUTNAM JACOBI suggested that as a chronic pyelitis had been found in Dr. Collins' case, it was possible that a parenchymatous nephritis had been grafted upon it, and that the diarrhea was simply a uremic symptom.

DR. COLLINS said that the point made by Dr. Stieglitz was extremely well taken. Spinal cord symptoms do not appear in pia tumors until toward the end, or when the tumor is of considerable size. Small tumors rarely make pressure on the cord itself, because the pia is not bound down by diverticula, and hence, has room to expand; but, as Dr. Stieglitz had very well said, in large and rapidly growing tumors, and, of course, in tumors of the medulla itself, the reflex symptoms are very early and significant. He had been led to believe from some recent investigations on the sympathetic nervous system, that the diarrhea was a sympathetic symptom. He believed that the sympathetic symptoms present in this case, of which diarrhea was one, and the urinary complication probably another, were due to a secondary degeneration or myelitic process set up after the disease had become well developed, and to implication of the medullary substance of the cord from the pressure of the tumor.

KATATONIA.

DR. FREDERICK PETERSON read a paper founded on

four cases of katatonia that he had personally observed at the Hudson River State Hospital at Poughkeepsie. Katatonia, he said, is a term applied to a certain group of psychical and motor symptoms which have often been considered as constituting a new and distinct form of insanity. He quoted the opinions of a number of authorities showing that katatonia has been looked upon as a clinical entity, as a variety of melancholia, as a form of circular insanity, as a species of hysteric insanity and, by one author, as atonic mania. The symptoms are essentially variable, and exhibit a tendency to change from phase to phase, often returning to a previous one. The earliest symptoms are: Abnormal sensations in the head, vertigo, insomnia, irritability, and a certain amount of gradually increasing melancholia. The second stage may be ushered in by convulsions, or the patient may become maniacal. Muscular tension and spasmodic movements are present. Rhythmical movements are often seen, but are always under the control of the will. Sometimes there is a condition of religious excitement; sometimes a tendency toward talking and acting theatrically, with perhaps a tendency to rhyming will be observed. Catalepsy is often extreme, and the muscles are generally in a state of tension. It is an extremely rare condition, he thought, presenting a symptom complex observed in many cases of insanity. The katatonic state can be distinguished from the insanity of pubescence by the fact that the delusions of the former are intellectual, depressed, and varied indefinitely, while in the latter, there are vague and stupid delusions. The chief diagnostic difficulty lies in differentiation from such cases of melancholia as manifest atonic or cataleptic states, but the rhythmic movements and tendency to repeat words and strike attitudes are important differential points. It is to be differentiated from hystero-epilepsy by the history rather than by isolated symptoms. From chorea it is distinguished by the fact that in chorea the movements are irregular and involuntary, and are not apt to exhibit such a variety of phases.

DR. PETERSON reported four cases—the only ones met with in a considerable experience extending over fifteen years. The following case was typical of them all: B. R., female, thirty-one years of age, married, possessed of a common education. She was admitted to the Hudson River State Hospital during February, 1884. There was no hereditary history. The first evidence of mental disturbance manifested itself in August, 1883, two months after the birth of one of her children. She developed complete anorexia, lost interest in her surroundings, and, three weeks before admission, became suicidal. Menstruation was regular. The case was at first regarded as one of puerperal melancholia. On February 11 she tried to beat herself against the bedstead, and claimed that she was being poisoned. She passed quickly into a condition of noisy excitement, and refused all food. She was markedly suicidal. She showed symptoms of exhaustion, and was fed by a tube for a considerable period. On March 15th she became cataleptic, and was absolutely silent, noticing no one, not even her husband. She began to wet and soil the bed. After a month or more she began to destroy her clothing and become filthy in her habits. In November, 1884, she began to cry out repeatedly, "Bring me to my children in New York," and this was repeated over and over again in a rhythmic manner, and more markedly on alternate days. After awhile she began to rhyme with a series of unintelligible words. Meanwhile she was improving in her general condition. In the autumn of 1886, improvement was very evident, and after a short time she was allowed to go home. A recent report shows that she has recovered completely and permanently. Each one of the other three cases began as a case of melancholia, in which cataleptic conditions developed, and then this phase of verbigeration with rhythmical movements was added. One very prominent feature of all four cases was the melancholia. The verbigeration and rhythmic gesticulations were, perhaps, the most characteristic features.

His conclusions were: (1) That katatonia is not a distinct form of insanity; (2) that it has no true psychical character in its manifestations, and, hence, cannot be classed as a form of circular insanity; (3) it is simply a type of melancholia, and it is not desirable, therefore, to retain the name "katatonia." Katatonic melancholia would be a convenient descriptive term. He was of the opinion that the prognosis in melancholia with katatonic symptoms is more grave than in any other form. The treatment is the same as for melancholia.

DR. WILLIAM HIRSCH said that he had studied these cases while an assistant of Kahlbaum, who had originally described the disease. Katatonia is only one of a number of peculiar forms of insanity that Kahlbaum has created. The speaker said that he had very carefully studied the records of the cases which Kahlbaum had himself diagnosticated as katatonia, but he could never convince himself that katatonia was a distinct clinical entity. In none of these cases could there be found a single symptom which was not sometimes present in other forms of insanity. Kahlbaum claimed that katatonia gives a very favorable prognosis, yet a celebrated pupil of his had recently published the statement that the prognosis is very bad. In 1874, Kalhbaum had asserted that katatonia is an organic disease, and had published certain pathologic descriptions in support of this position. This seemed to be directly opposed to his estimate of the prognosis, and he believed that Kahlbaum has since abandoned these views.

DR. WILLIAM LESZYNSKY asked Dr. Peterson if those cases which show cataleptic symptoms also exhibited symptoms of trance at the same time.

DR. PETERSON replied that they had not done so any more than the ordinary cataleptic.

DR. LESZYNSKY recalled a case in his practice in which the patient had become cataleptic, and had remained in a trance state for three months. A certain surgeon had removed both ovaries from this patient, with the idea of curing her. A curious feature was that she became conscious some time before death, and told him in the presence of others that she had been perfectly conscious of what had taken place during the previous few months, and proved her statement by recalling certain incidents.

DR. HALLOCK said that he had seen two cases of katatonia. One of these had passed into dementia; the other had been considered at one time to be a case of melancholia, but the later symptoms had been of a hysteric order. The katatonic symptoms had finally passed off, and the patient had made a good recovery.

DR. RAFEL remarked that there must necessarily be great confusion if, as Kahlbaum had stated, any one of the phases might fail.

DR. PETERSON, in closing the discussion, said that most of those who have followed Kahlbaum have looked upon the prognosis as very grave, some authorities having placed the recoveries at three per cent. Of the four cases reported in the paper, one patient recovered. In the fatal cases, the patients passed into a condition of dementia, and generally died of tuberculosis, which is also consistent with the idea that katatonia is a variety of melancholia, as this is a common termination in melancholia.

REVIEWS.

ANATOMY, DESCRIPTIVE AND SURGICAL. By HENRY GRAY, F. R. S., Lecturer on Anatomy at St. George's Hospital, London. New and thoroughly revised American edition, much enlarged in text, and in engravings both colored and black. In one imperial octavo volume of 1239 pages, with 772 large and elaborate engravings on wood. Lea Brothers & Co., publishers, Philadelphia and New York, 1896.

A DICTIONARY is the great balance-wheel of the language of a people. It establishes the lines along which the development of a language may advance, and, at the same time, it holds in restraint a too rapid progress in directions which tend to deteriorate rather than to improve. In the authority of its utterances and in the respect in which it has been held by generations of medical students and practitioners, Gray's "Anatomy" bears about the same relation to anatomic literature which the general lexicon bears to a nation's language. The emotions that its presence recalls are most conflicting. There are times in every medical student's life when he feels as he takes it from the shelf that no wildcat that he may be called upon to master could possess more venomous teeth and claws than are contained within the covers of this venerable book. At other times the lucidity of its descriptions and the accuracy of its illustrations afford the keenest delight. From these conflicting emotions a love and veneration are begotten which endure through a professional career. It is, therefore, with no slight degree of gratification that this new edition is welcomed from the press of Lea Brothers & Company. Not only has there been a general revision of the work as a whole, but in certain departments in which investigation has been especially active during recent years radical changes have been introduced. The sections which have been rewritten are those on the brain, the teeth, and the abdominal viscera. The chapters on histology and development, a feature peculiar to Gray, and one of inestimable value in affording a key to what would otherwise prove anatomic mysteries, have also been revised in accordance with the latest discoveries in this field of work. "Gray" has always been distinguished by a series of splendid illustrations. These have been enriched in this new edition by no less than one hundred and thirty-five additional engravings. In these, distinctive colors have been used to give greater prominence to the veins, arteries, and nerves, as well as to the attachments of muscles. In mechanical execution no effort has been spared to render this work worthy of the continued reputation won by "Gray" in the past as the foremost of medical text-books. This new American edition is destined to maintain in every respect the exalted position which for many years the work has enjoyed.

A TEXT-BOOK OF BACTERIOLOGY, INCLUDING THE ETIOLOGY AND PREVENTION OF INFECTIVE DISEASES, and a Short Account of Yeasts and Moulds, Hæmatozoa, and Psorosperms. By EDGAR M. CROOKSHANK, M.B., Professor of Comparative Pathology and Bacteriology, and Fellow of King's College, London. Fourth Edition. Philadelphia: W. B. Saunders, 1896.

ALTHOUGH this well-known work is now in its fourth edition and has been increased by the addition of twenty-six new chapters, still it does not embrace all the recent advances made in the department of bacteriology. After a rather careful reading of the book we have been impressed by the fact that the author is far more profoundly informed in animal, than human, bacteriology. For instance, the chapter on malarial fever covers four pages, while fifteen pages are devoted to hematoza in horses, fishes, rats, and frogs, and seventeen pages to an outbreak of cow-pox in Wiltshire, with the author's investigations to disprove the Local Government Board's idea that scarlet fever has its origin in cows. When one considers that more than thirty pages are given to actinomycosis and but one page to gonorrhea, it will be noted that the work is not as evenly balanced as it might be.

The methods of staining bacteria should have been more minutely described, also the preparation of sections. If a student has no knowledge of histological methods in general, this work hardly explains the details clearly enough for his needs, and therefore as a text-book on bacteriology it cannot be compared with some of the recent books with which we are familiar.

A chapter on photography has been added and the methods are clearly but briefly outlined. A chapter on the classification of species for diagnosis, modeled after Eisenberg, and a short account of each organism arranged for easy reference, increase the value of the book. Space does not admit of our reviewing this work as fully as we should like, but we can heartily commend it as a work of reference to the advanced student, particularly to those interested in diseases of the lower animals. The chapter on actinomycosis, for example, is the best that we have seen in any text-book. The text is remarkably free from typographical errors, the type and paper are excellent and the illustrations are profuse and for the most part superb.